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# MANUFACTURERS

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## A Hive Or A Home?

The qualities of industry, thrift and ambition that have always been the foundation stones of personal success, too long have been publicly questioned as very doubtful virtues.

Men of reasonable intelligence and means now feel that the Government considers success a crime and that it places a premium on mediocrity. This public attitude levels DOWN, not UP. It destroys individual initiative. It reduces the society of man to the society of the bee.

It is well to remember that in a BEE society the drones are killed and the honey, the product of the industrious, is taken from it by a superior power.

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April, 1944

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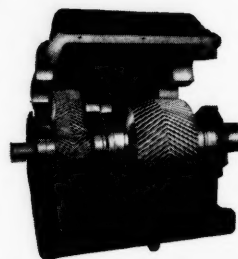
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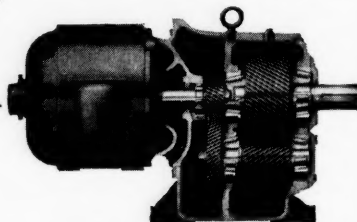
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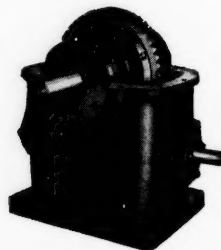
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# MANUFACTURERS RECORD

ESTABLISHED 1882

*A Publication for Executives*

Volume 113

APRIL, 1944

Number 4

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## Norfolk and Western Income Up

Gross revenues of the Norfolk and Western Railway during 1943 increased nearly eight per cent over 1942 and freight and passenger traffic exceeded all previous records. Net income increased only about one and one-third percent. This was due primarily to gains of approximately seven percent in tax accruals and close to eleven percent in operating expenses, according to the railway's annual report, just released.

The company's tax accruals were \$49,198,000—more than twice the railway's net income of \$22,197,249. Taxes amounted to 33 cents per dollar of operating revenues and to \$2.21 for each of the company's more than 22,000 employees.

The Norfolk and Western's total payroll for the year 1943 was \$53,110,000, an average of \$2,387 per employee. There were 3,134 employees of the railway serving in the armed forces on December 31.

The report showed that the railway had a property investment of \$556,323,000, averaging \$25,004 per employee. Additions and betterments to the company's property during the year included installation of centralized traffic control from Roanoke to Stuarts Draft, Va., a distance of 85 miles, and from Shenandoah to Bentonville, Va., a distance of 34 miles; modernization of automatic signals from Fort Gay, W. Va., to Columbus, Ohio; installation of more than ten miles of second main track between Vesuvius and Cold Spring, Va.; construction of additional passenger, mail, baggage and express facilities at Blackstone, Va., as well as numerous other improvements designed to speed record-breaking traffic over the Norfolk and Western.

## International Edition of Cotton Trade Journal

The 1943-44 International edition of the *Cotton Trade Journal* has been issued. Profusely illustrated, it contains numerous articles by national and international authorities on cotton, finance, engineering and foreign trade.

Contributors include Joseph C. Grew, former Ambassador to Japan; Maj. Gen. E. B. Gregory, Quartermaster General, U.S.A.; Sumner Welles, former Under Secretary of State; Jose Leite de Almeida of Brazil; Rafael Garcia Mata, General Director, Argentine National Cotton Board; Anis Azer, Commercial Counselor, Royal Egyptian Legation; R. C. Suntook, textile engineer of Bombay, India, and Dr. Syud Hossain, special lecturer on Oriental civilization at the University of California.

Available from the *Cotton Trade Journal*, Cotton Exchange Bldg., Memphis, Tenn., \$2.50.

## Carriers Get More Rails

Railroads of the United States were allotted 1,538,984 tons of steel rails in 1943, says the Office of Defense Transportation, an increase of 278,984 tons over 1942 allotments. Average of new rail placed in tracks during the 1921-29 period was 1,855,432 tons, while the 1930-39 average stood at 784,943 tons. War Production Board has been asked by O.D.T. to allot 2,200,000 tons of new rail for 1944.





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## Little Grains of Sand

*"Little drops of water, little grains of sand,  
Make the mighty ocean, and the pleasant land."*

A magazine such as the MANUFACTURERS RECORD, edited for business executives, is compelled today to include in its columns political comments because of the fact that politics has intruded upon the sphere of business. It would be much more pleasant for us who write and, undoubtedly, for you who read to learn of the things that business men accomplish instead of the impediments that are thrown in the way that makes their accomplishments so much more difficult.

It is necessary, however, to call to the attention of every man that our words can reach, the necessity of eliminating the unnecessary or malicious stumbling blocks that are thrown in the way of National Progress.

Excerpt from a letter recently received:

The other day, at Charleston, the chairman of a draft board told me that at the request of the superintendent of a great southern railroad the board placed a railway switchman into 1-A because he was off two days out of three, drinking. He appealed. The board denied the appeal. Within a week, seventeen union officials descended upon the board and the railroad superintendent and forced the board to place the man on the deferred list. The board was helpless, as the superintendent had withdrawn his request to have the man taken off the deferred list.

Such things as this make one want to dodge taxes, buy black market gas and do other unpatriotic things.

An alien, who has been ordered deported, is now actively campaigning for the reelection of our Nation's Chief Executive. This alien is Harry Bridges. He was ordered deported by Attorney General Biddle. His appeal for a writ to annul this order was ruled against by the Federal District Court at Sacramento, California. He then appealed to the U. S. Court of Appeals where his case is still pending. This man, who is not an American citizen, has the audacity to address audiences and attempt to influence an American election.

To an outside observer it looks as though the day of the carpet bagger is being revived, with the carpet bagger's outlook and field of effort extended.

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With the withdrawal of a prominent candidate for the Republican nomination, the air has definitely been cleared in that great party.

It would be fine if the smoke-screen of New Dealism still covering the country from its origin in the White House could also be dispelled.

Think of the pleasure of honest enthusiasm and thoughtful consideration that would face the voters of this country if they had the opportunity to choose between an apple-growing senator and an ex-district attorney governor. They could make their choice between hardheaded common-sense and honest and honorable Americans who have placed, and will continue to place, their country's interests above any thought of personal popularity and of selfish seeking in the hope of historic grandeur.

Army and selective service officials who are taking the attitude that, regardless of a man's special scientific qualifications, the fighting forces shall have first call on his services, are pursuing a course that can be almost as ruinous to our national welfare and the progress of the war, as defeat at the hands of the enemy. A case in point to justify this view can be found in the death of J. O. Beasley, a young scientist at Texas Agricultural and Mechanical College, who was killed in action in the Pacific battle zone.

We quote in part from an editorial in the *Dallas Morning News*:

Long ago leading scientists realized that the cotton plant (one of the world's oldest economic growths) would have to undergo basic modifications if anything like an ideal cotton type, yielding at one and the same time more lint and more oil and protein, was to be developed. Cotton breeders forty years ago attempted to give us half-and-half with a lint turn-out of as high as 46 per cent, almost half fiber and half seed. Without discoursing on the merits or demerits of this type, which has become greatly popular in our western dry-land areas where mechanized cotton production is destined to make greatest progress, this editorial merely calls attention to what seems to be inherent in the cotton plant, as we now know it, and that no ideal high-yielding lint and oil type has been developed to date.

Cotton breeders recognize that the best that can be obtained is a compromise with natural law which has fixed certain characteristics not only in cotton plants but in all plants. To break up this inherited set of characters it is necessary to modify the structure of cotton's chromosomes and genes by the crossing with more or less distinctly related species. Here at Texas A. & M. College such an attack was made upon the cotton plant by a young scientist—J. O. Beasley—who astonished his colleagues and rival cotton researchers a few years ago when he succeeded in producing crosses of various wild cottons and domesticated types by a new technique of doubling the chromosomes of the wild strains. That im-

## MANUFACTURERS-

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The tempo at which the nation's industrial machinery is being operated to produce our enormous war needs is making demands of it far above normal. Replacements will be necessary in many industries when peace dawns.

To all manufacturers, particularly those who must replace their equipment, the Seaboard extends an invitation to establish their plants in the Southeast. This area possesses those attributes making for successful operation now and insuring a strong peacetime competitive position.

The Seaboard's Industrial Department is maintained to assist manufacturers in their plant location problems. Your inquiry will receive prompt confidential attention and at no cost or obligation.

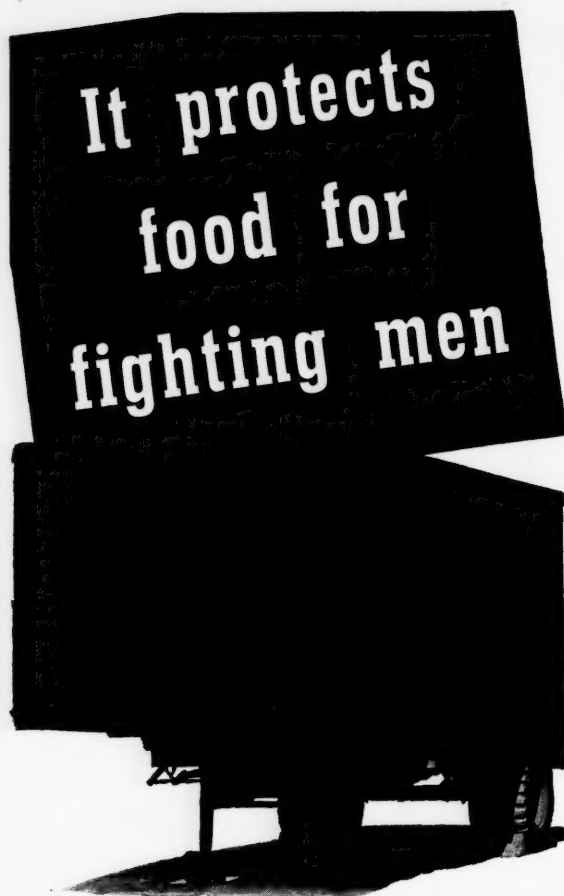
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Food taken on long hauls is protected by sub-freezing temperatures in heavily insulated trailer bodies. *ARMCO Galvanized PAINTGRIP* sheets cover the top and sides of this refrigerator on wheels.

*ARMCO PAINTGRIP* is used because this zinc-coated metal takes and preserves paint. Since any color combination may be used, *PAINTGRIP* sheets can be camouflaged effectively. Paint goes on fast because no pre-treatment is needed. The Bonderized film insulates paint from the zinc, greatly retarding peeling and flaking. It is not affected by weather, or dampness inside the trailer.

Consider this paint-gripping galvanized metal for your war jobs. And remember it when you plan the new products you will make when peace comes. For more information write The American Rolling Mill Co., 1091 Curtis St., Middletown, O.

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mediately opened one of the most promising fields for cotton development, but unfortunately for Texas and the world, young Beasley was killed in the Pacific battle zone and the world lost an outstanding scientist it sorely needed to revive the cotton industry.

The National Executive Council of the Textile Workers' Union of America (title sounds imposing, doesn't it?) has bitterly opposed the principles of the Baruch plan as "a pattern for a return to 'business as usual' and a denial of the principles of militant democracy for which we believe this war is being fought."

This Council with the impressive name declared, "In the main, the Baruch Plan is a blueprint for another return to 'normalcy' and on its face is merely another drive by free enterprisers to 'get the government out of business' and the country back into the disastrous groove of cartels and monopolies."

Utterances such as this from sources such as this make it plain that the radical leaders of organized labor are going to exert every pressure that is within their power to exert to maintain their special and privileged position with the Government after the war is over. It seems as though selfishness begins at home and that charity is something that is left to the other man, in the minds of labor leaders.

Chamberlain appeased and we have seen the result. The following is an excerpt from an advertising solicitor's report. It reflects a domestic economy attitude of appeasement that is frightening and just as in Chamberlain's case is sure to become serious.

Strange as it may seem, I got turned down by several concerns which give a salesman sizable amounts regularly for a labor paper. This helps give circulation to the fight against the very man who is paying for the printing job. On pages two and three of this paper is a list of twenty leading cotton millers showing the increase in their profits. Were these same mills to take no profit at all, I do not believe the entire sum made would increase wages enough to add a pint of liquor a week to their earning power.

Bureaucratic Washington has made another serious mistake. In compliance with O.P.A. and W.P.B. rulings, directive orders have been issued to begin the distribution of a limited number of electric alarm clocks. According to Government sponsored surveys, there is a critical need for alarm clocks, and material

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has now been released for production of as many clocks as possible without interfering with war orders.

Prior to a National election, this seems to be one of the major mistakes that our Bureaucrats have made. They are planning to place in the hands of the American people an automatic means of awakening them from their sleep.

Mr. Samuel B. Pettingill quite properly comments on a ruling of the War Labor Board which has decided that if an editor joins the American Newspaper Guild and then resigns from it, or the Guild expells him, that the newspaper for which he works must discharge him. Mr. Pettingill's comment, in part, is as follows:

"If Congress passed a law requiring a newspaper to discharge an editor whom the paper wished to retain, would you say Congress had interfered with the freedom of the press? Every school child who had read the Bill of Rights—'Congress shall make no law abridging the freedom of the press'—would have only one answer to that question. Yet the War Labor Board has done what Congress cannot do.

"The WLB ruling puts pressure upon the editor or reporter to write nothing offensive to the Guild. Newspapermen are generally a tough-minded lot. Many, perhaps most, would resist this pressure. Yet the pressure is there. We dismiss men from juries who have any economic reason for deciding a case. The law does not expect every juryman to have the courage of a lion.

"Yet, even if no guild member ever 'slanted' a story or editorial in favor of the CIO against the AFL, or the Guild's position on the sales tax, or the closed shop, or the soldiers' ballot, the evil remains in the mere suspicion the readers of the paper may have. What they read is colored by membership in a union in which the writer must continue in good standing at the price of losing a job."

If this ruling is permitted to have the substance of law that so many bureaucratic regulations have had in the past, then this free people have relinquished by ukase freedom of the press.

The record of the South's contribution to the present war is one that will loom large in the pages of our history. Its agriculture and industries have produced in quantities that seem staggering, while its wisdom in matters of national and international co-operation places it in first place as compared with other sections of the country.

The Lend-lease law would have been beaten in Congress but for the support of Southern Representatives, and it was the votes of these same Southern Congressmen who made the extension of selective service possible when the law which established it for one year neared its end.

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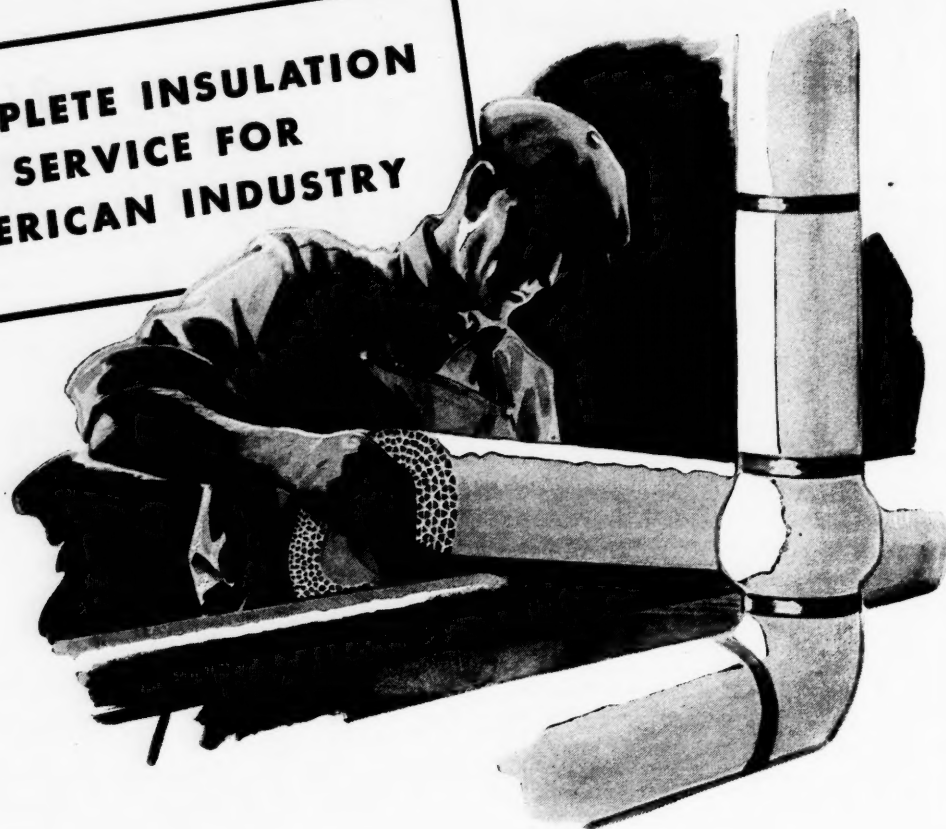
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*"What Enriches the South Enriches the Nation"*

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## Labor Unions In America

A racketeer selects the most profitable and easiest racket.

Where are the bootleggers, hi-jackers and other racketeers of the prohibition era? Where are the scum that they spawned?

It is possible that some of them, a great many of them, could be found among the leading lights in labor unions, especially in the more newly organized unions.

In a labor union the unscrupulous man has a two-fold source from which he can fatten his income. He has the dues and fees that are exacted from the compulsion of union membership and the blackmail that can be levied on the employer of the labor that he controls. He also has the legal immunity provided by the one sided Wagner Act. He is permitted to receive as EXPENSES income tax exempt money that whether legitimately or illegitimately collected should be taxable as personal salary. The Wagner Act has enabled his successor to make Al Capone look like a novice.

It is true that some unions run their affairs in what they consider an honest and straightforward manner. The men at their heads have the welfare of their membership at heart, but these same men know that they would be branded as traitors and outcasts if they were ever to accept positions from management to which their abilities and character entitle them. There is therefore the constant temptation before such union leaders of integrity to capitalize on their own positions at the expense of their membership and the industry it serves. It is a real temptation for which the idea of group organization and the frailty of human nature is responsible.

There are undoubtedly many more honest and capable union leaders than there are those who, like leeches, have fastened themselves on the bodies of their fellow men, but these honorable men would be called renegades by the membership of their unions if they accepted management positions comparable with their training and ability.

There is something fundamentally wrong with "unionism" in an American society. The fact that, because of present laws, it has become the happy hunting ground for the unscrupulous, is a condition that can be corrected by logical legislation that will give labor unions the same legal status as any other corporation. This can and will be done when sanity returns to public thinking and reflects itself at the ballot box. But this is not fundamental.

The thing that is wrong with "unionism" is the underlying idea of unionism itself. It is the idea that men in a free society such as ours should band themselves into groups in order to advance the selfish interests of a group.

Our nation is peopled by Americans, not Southerners and Northerners, not Protestants and Catholics, not city-dwellers and farmers, not even Democrats and Republicans. Why should it be peopled by members of labor unions which not only strive to advance their selfish interests at the expense of the public, but carry on their selfish struggles among themselves. The old saying that "in union there is strength" has been used to justify the labor union. Biology and history both prove that progress is made through the survival of the fittest. Animals band together in packs or herds not to protect the weak but to increase the power of the pack leader. Human beings developed through the stages of the tribe, of the feudal lord and despot or under the leadership of men capable of being leaders at the expense of the "pack" that they gathered to support them. In every form of life mediocrity makes up the pack. Ability makes the leader.

In our American way of life, leaders can make themselves. We have had Andrew Jacksons, Abraham Lincolns, Thomas Edisons and Henry Fords. None of us know how many embryonic great men have never been given a chance to develop to greatness because they were leveled down by labor unionism before their talents had a chance to reach fruition.

# Freedom Or Security?

Guest Editorial

by

**Thomas O'B. Flynn,**

*Editor*

*Wheeling Intelligencer*

A Chinese philosopher, Dr. Lin Yutang, has put into words much better than we have been able to command, a thought which we have been hammering on ever since "security" was elevated to number one place among the human objectives of our modern planners, global and domestic.

Speaking of the much publicized four freedoms of the Atlantic Charter, Dr. Lin says:

"Two of the four freedoms are not freedoms at all. Freedom from fear is not freedom, but political security. Freedom from want is not freedom, but economic security. Both may be achieved at the cost of human freedom, and probably will, if we think too much about animal security.

"Nothing gives such a feeling of perfect freedom from want and fear to a dog as a collar around his neck. Its next meal is guaranteed. A bird in a cage has exchanged its freedom on the wing for freedom from the preying hawk and freedom from starvation in the snow. But a bird which deliberately flies into a cage cannot be said to be fighting for its freedom except by the most caustic casuistry.

"We may, if we like, easily add a few more freedoms, like 'freedom from disease,' which is health, and 'freedom from dirt,' which is cleanliness, and 'freedom from the telephone,' which is peace and rest—ad infinitum.

"And so when we speak of freedom we must stick to the original meaning of the term, just plain good old freedom—human freedom. It is possible for man to have all the four freedoms—to talk and think as he pleases and to be fed and sheltered in security—and yet be a slave."

Dr. Lin may not be aware of it, but, boiled down, the whole concept of the New Deal—and we find it projected in much of the world planning—is to relieve the individual of all personal concern for his material well being. The idea is summed up in the word "security."

Now, we submit, as Dr. Lin has so strikingly put it, that security from some outside source against all the hazards and unpleasanties of life is incompatible with personal freedom.

The slaves of the Old South were the most socially secure class in the history of this Country. They didn't have to worry about crop failures. The master did that. Their creature wants were cared for just as were those of the valuable livestock on the plantation. But in exchange for this security they had to surrender their individual freedom.

If the objective of government is to free the individual from all of his worries about a job and three square meals and a place to sleep and a doctor to tend his ills, etc., etc., then government must control

the individual as the plantation owner controlled the slave.

If we want that sort of thing we have been on the right track for the past decade and more. The way to harvest the full fruit of this security idea is to keep right on as we are.

For our part we'd rather trade security for the right of individual liberty—the right to make mistakes as well as ten strikes, the right to suffer the consequences of our folly or reap the reward of our wisdom and industry.

We want to see again in this land a Government dedicated to the doctrine that man is entitled to the pursuit of happiness, but not necessarily to happiness itself.

## Owe It To Ourselves

Semi-permanent denizens of Washington who, for more than a decade, have broadcast the foolish economic opinions of economists and crackpots, both foreign and domestic, tell us that we should not worry about the increasing size of our Federal debt, because we just "owe it to ourselves." Of course, this argument can be exploded by any thoughtful individual. It is pure political hokum.

Suppose the fanciful vaporings of these farce-producers were taken at face value. Suppose we simply owe this money to ourselves, idiotic as that supposition may be. With this supposition and assumption, let us see what might happen.

Before you can dispose of this supposition and assumption as totally fantastic, the "social security" reserve fund, so called, should engage your attention and thought. Who has it, and where is it? The answer is simply: Nobody has it. It has been spent. Who will pay it when it is due? Succeeding generations may not agree that they owe this to their parents rather than to themselves, but of course silver tongued orators can persuade them that they are merely doing their share and "passing the buck" on to further future generations.

Owing money to ourselves would greatly simplify many personal problems. Money owed to ourselves in the form of taxes could be ignored or a memorandum could be made and sent to the Government stating that we owed ourselves a certain amount of money. It need not bother us. It could be paid at any time that we saw fit, because we simply owed it to ourselves.

There really is something to be said for this theory from a purely practical political point of view. It would be a little difficult for the more than three million Government receivers who at present get this money that we owe to ourselves but, through the Government's taxes, pay to them, if they were forced to pay their rent and their grocery bills with a memorandum signed by John Smith or Bill Jones. It is more than possible, it is quite probable, that they would leave the ship of state as rats do a sinking ship and hurry over to the side of those who wrote memorandums instead of receiving them.



# What About Our Huge Federal Debt?

by

Walter E. Spahr

*Professor of Economics, New York University, Executive Secretary, Economists' National Committee on Monetary Policy*

THE continued expansion of our huge Federal debt and the possible ways of disposing of it are of great importance to every man, woman, and child in this country, and to generations to come.

These are matters that cannot wisely or safely be left for serious consideration at some later date when they can no longer be escaped. To a large degree, the form that these debt problems will take in the future will be determined by the care and understanding with which they are considered now.

Already groups, schools of thought, concepts, and lines of battle are being formed regarding the expansion of our Federal public debt and how it should be handled.

If the lessons of human experience have any value whatever, some of these current concepts and agitations are dangerous indeed and point to trouble ahead unless the fallacies involved are adequately exposed before it is too late.

Probably no one knows at present the extent to which the poorly informed have been impressed by those persons—some of whom are high up in official circles—who are attempting to assure the general public that our colossal Federal debt is really harmless, that in fact it has several virtues, that it presents no important problems “since we owe it to ourselves”, that huge government expenditures mean equally large receipts by the people and, therefore, are not dangerous, and that no nation can go bankrupt anyway.

It seems quite clear, furthermore, that a very large number of people have only the vaguest notions regarding the nature of the various devices, such as debt cancellation, the devaluation of the dollar, the issuance of fiat money, or debt repudiation in some other form, which certain groups are preparing to urge as “the way out.”

It is important, therefore, that the basic issues involved in these matters be reviewed now in anticipation of what is to come.

First of all, what will a Federal debt of 300 billion dollars mean to each of us? Quite obviously, it will

mean a Federal obligation alone of approximately \$2200 per capita. In addition, there will be state and municipal debts and a huge volume of private obligations. What the total debt burden per capita will be when the Federal debt reaches its peak, no one can estimate with accuracy.

But thinking in terms of the debt load per capita is not particularly

Dr. Walter Earl Spahr is Professor of Economics at New York University and Secretary-Treasurer of the Economists' National Committee on Monetary Policy. He needs no introduction to economists and serious-minded business men whose duty it is to guide the fiscal policy of the Nation. We consider it a privilege to have the opportunity to present Dr. Spahr's article to the thoughtful readers of the MANUFACTURERS RECORD.

—Editor.

helpful. The burden falls directly on only those who pay taxes, although all others are affected indirectly. If the father in a family of five is the sole income earner and taxpayer he will, on the average, be faced with a Federal burden of \$11,000—that is what the average per capita debt of \$2200 will mean to him.

Furthermore, the concept of “average”, whether applied to individuals or to families, is often misleading. Some families have several income earners; some have only one; some have none.

Still further, the trends of our population, as revealed in births, deaths, emigration and immigration, indicate that the peace-time proportion of our income-earning males is growing smaller as against the proportion of those who constitute a burden on these workers. The death rates among those below and beyond the ages of active production have been declining in recent years. In short, there are, relatively,

an increasing number of people below and beyond active productivity who constitute an ever-growing burden on those living through, or just coming into, their years of productivity. It is on this income-earning group and on the older people who have their savings at work that the burdens of this huge debt will rest. To the extent that women and girls become increasingly important as earners of incomes in production, this picture will be modified.

Practically every person in the armed forces, despite the sacrifices he may make in this war, will, if able to produce, return to shoulder a share of this heavy debt. While the great majority of those who have been responsible for the huge spending and debt policies pursued by our government during the last decade have urged and promised greater security for all, they have at the same time piled tax after tax and more and more debt upon those who are the chief producers of the incomes from which these taxes must be paid. Furthermore, they are preparing to place upon those young producers, when they return from war, where there is no security, much of the burden of paying not only for this war but for a grandiose social security program which they hope to see enacted into law. The price of this promised security has been, and apparently will be, less security or no security for those called upon to pay the bill.

It should be clear to anyone that to the extent he is not compelled to pay taxes he can use his wealth in the pursuit of his private interests and enterprise. And, with minor exceptions, the well-being of the people, individually and collectively, is advanced best when government taxes are relatively light and when private enterprise is free to produce the wealth which they need and desire.

A government debt is harmless only when it is small; it is never harmless when it is large. And no well-informed and honest person would ever attempt to argue that a large government debt has any virtues as compared with a much smaller one.

There is much current discussion to the effect that, since the evidences of our national debt are held chiefly by our own people, and very little by others, it is something less than an outright debt and can be treated differently than if we owed it to people in other countries.

This "we-owe-it-to-ourselves" notion is one of the fantastic aberrations of the day. It is a sad commentary upon our times that there is need to describe this fantasy and to point out the fallaciousness of the major contentions associated with it.

The basic assumption is that since we owe the debt to ourselves it cancels out and we need not pay it. We can simply repudiate it.

There is no better basis for this assumption than there is for the assertion that since one member of a family borrows money from and owes another member of the same family the debt is not a debt and can be cancelled.

Cancellation of debts between brothers, as between others, would be defensible only if each owed the other the same amount and if the debts matured at the same time. Our Federal debt has a great number of maturities and is held by all sorts of people and institutions in an endless variation of amounts. Some of the holders have no debts and some pay no taxes—for example, some churches, foundations, educational institutions, and so on.

The notion that, because our Federal debt is held largely within the boundaries of this country, the debtors and creditors can be made to cancel their claims and obligations with something like justice to all is complete nonsense, and all related arguments as to how to cancel the debt, because "we owe it to ourselves," are unworthy of any serious consideration.

Let those who think that this huge debt should be cancelled, because "we owe it to ourselves," consider a few of the devastating consequences that would flow from such an act:

Most insurance companies are heavy investors in government securities. Cancellation of the Federal debt would compel these companies to write down the value of all insurance policies to the extent that the companies' assets, represented

by government securities, are wiped out. Policies on which people have paid premiums over the years would have their values radically reduced or destroyed.

Practically all our banks are heavy investors in government securities. Cancellation of the Federal debt would make it impossible for them to pay more than a small percentage of what they owe their depositors and stockholders. The value of the assets held against the deposits in the United States Postal Savings System would be destroyed since these assets are chiefly in the form of United States government securities. The sole assets held by the Federal government against the cumulating obligations in the Federal social security program—old-age and unemployment insurance scheme—are United States government securities, except in so far as cash is appropriated to meet current liabilities. A great proportion of the assets of many of our government and other corporations is United States securities. In all these cases, destruction of these assets would not reduce their liabilities, and bankruptcy for them would be the necessary result, with disastrous consequences for all holding claims against them.

Then there are the hospitals, colleges and universities, foundations, religious institutions, endowments, savings in the form of trusts, and so on that would be ruined by repudiation of the Federal debt.

To cancel the Federal debt is to cancel this Federal obligation and to reduce correspondingly the need for taxes. But such cancellation merely destroys the assets of all holders of these Federal securities; it does not cancel the huge volume of liabilities that rests upon these assets! A national conflagration of bankruptcies would be the unavoidable consequence.

The question of debt cancellation is not simply a matter of reducing the tax burden; it is more a question of the destruction of values throughout the nation to an extent that would stagger the imagination. Devastating national disaster beyond anything that our people have ever experienced or dreamed of would be the price of such an act.

Closely related to the "we-owe-it-to-ourselves" fallacies is the argu-

ment that "every cent expended, private or public, becomes income for members of our own society." It is difficult to realize that such a statement, with its implications, could come from official circles, as it did.

Perhaps all that one would need to say to the author of such an observation is that he might do well to look at the economic distress of the German people in November, 1923, when their expenditures involved 222,397,318,000,000,000 marks in the form of bank notes and deposits.

Or one might suggest that he read Andrew White's *Fiat Money Inflation in France* to learn just how commerce and industry died and how betting and the guillotine took their place when, at the end of the 18th Century through the use of a large volume of *assignats* and *mandats*, the French people tested out the theory that "the money spent becomes the income of the members of society."

These are only two of many available illustrations of what are after all supposed to be elementary lessons in the economics of money and of public and private spending. Everyone who has had a smattering of elementary economics is supposed to know something more than that the money spent by someone is equal to the money received by those who got it. They are supposed to be able to think beyond money payments to what the state of affairs is regarding productive activity and wealth and income as measured in terms of goods and services.

Then there is the oft-related notion that a nation cannot go bankrupt anyway, since it will have its resources and manpower regardless of what happens to its finances. This contention, like the preceding one, has also come from official circles, and it has caused people who should know better to inquire in all seriousness whether a nation can go bankrupt.

It should be sufficient to point out that one may say precisely the same thing when an individual becomes bankrupt—the resources and manpower are in existence even though he cannot pay his debts. The ownership and possession of the real wealth may change hands and

still exist, although one or more individuals are bankrupt.

Destruction of values and destruction of real wealth may be, and usually are, two very different things.

If a government piles up a debt so that the taxpayers cannot meet the burdens, then wealth of the creditors is destroyed although this may not immediately reduce the volume of goods and services in existence. Such destruction of values can nevertheless bring serious or disastrous consequence. No creditor could find satisfaction in being told that the total amount of real wealth is not at the moment any different merely because those who owe him are bankrupt and cannot pay.

When a government, like an individual, cannot raise the money to meet the interest charges and other obligations as they mature, it and the nation acting through it are bankrupt. Both the debtors and creditors, and perhaps many others, are faced with devastating losses. We saw a great mass of our people unable to pay or carry their debts during the years 1930-1933, particularly. We saw the destruction of values. We talked of bankruptcy in the midst of plenty, and even became so impressed with the importance of the values and the unimportance and even the "evils" of the plenty of real wealth that our government in its confusion set about destroying some of this real wealth to increase the value of the remainder.

The lessons of 1930-1933 seem to be entirely lost on those who now insist that national bankruptcy cannot occur because the real wealth and manpower will still be there even though the great mass of people, because of a huge public debt, cannot meet their obligations.

In the disaster of 1930-1933, the widespread bankruptcy was due chiefly to the inability of the people to meet the burdens of private debts. But if our government, by its spending, borrowing, debt, and tax policies, should pile up tax burdens that the taxpayers cannot carry, equally wide or wider bankruptcy may occur and the nation can become bankrupt. Should the taxpayers fail to pay, the creditors would face losses, and values

would be destroyed.

These things have happened to many peoples in many nations again and again. Consequently, when anyone is so foolish as to assert that a nation cannot go bankrupt, let him be reminded that he apparently is insisting that there can never take place a destruction of values sufficiently widespread to be generally disastrous. If he insists that such is his contention, then he should be asked to explain what happened in Germany just prior to, and in, 1923 when she devalued the paper mark at a rate of 1,000,000,000,000 paper marks = 1 Rentenmark.



Walter E. Spahr

Or he should be asked to state whether or not France was bankrupt when she reached the end of her disastrous experiment with *assignats* and *mandats* and Napoleon took over. Andrew White did not misunderstand the situation. He recognized national bankruptcy when he saw it. Describing the stagnation which "became worse and worse," he said: "At last came the collapse . . . . When Bonaparte took the consulship the condition of fiscal affairs was appalling. The government was bankrupt; an immense debt was unpaid. The further collection of taxes seemed impossible. . . and the largest loan that could for the moment be effected was for a sum hardly meeting the expenses of the government for a single day."

Writing of the slow convalescence from what he properly called na-

tional bankruptcy, White observed: "The acute suffering from the wreck and ruin brought by *assignats*, *mandats* and other paper currency in process of repudiation lasted nearly ten years, but the period of recovery lasted longer than the generation which followed. It required forty years to bring capital, industry, commerce and credit up to their condition when the Revolution began, and demanded a 'man on horseback' who established monarchy on the ruins of the Republic. . . ."

Andrew White recognized national bankruptcy when he saw it, and he was well aware of the fact that, during the very period he was describing, there were people holding the view then, just as some of our people are holding it now, that no nation could go bankrupt by issuing an "adequate" supply of money and spending it, since the people would have their resources and manpower. France issued her money against natural resources—the church lands which she confiscated—and, when values collapsed and she became bankrupt, France still had her lands.

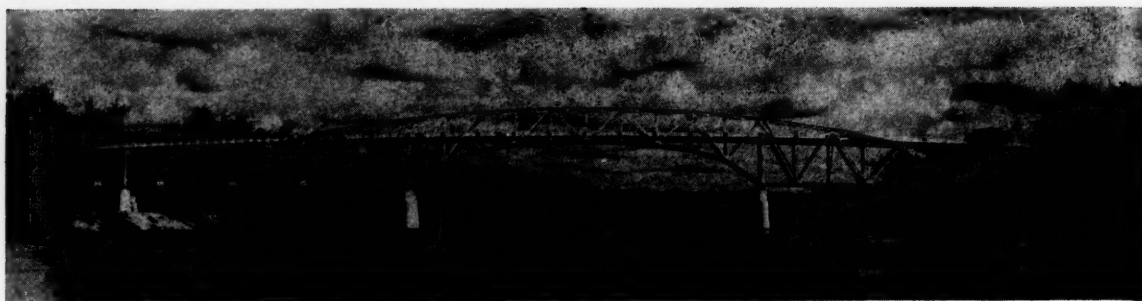
If these current notions regarding the harmlessness of a large public debt are so fallacious, if the talk about the debt being owed to ourselves and about a nation not being able to go bankrupt is that of foolish people, and if proposals for cancellation are so indefensible, what can and should we do about this great obligation? It presents a problem that we cannot escape.

We can, of course, plan to tighten our belts and to pay it off as rapidly as possible in the good old American way. But how rapidly can this be done? No one can say with any assurance.

Our best record was during the years, June 30, 1919-June 30, 1930, when we reduced the Federal debt approximately 9.3 billion dollars in eleven years—an average of about \$845,000,000 per year. But this record does not indicate what we could average per year should we set about seriously to reduce our present ever-mounting debt. Obviously, if we averaged two billion dollars per year, it would require 150 years to pay it off. Of course we will not pay it all off. The Federal debt is a desirable asset for those

(Continued on page 60)





Apalachicola River Bridge in Florida, where the state road budget this year is \$28,554,035.

# Industrial Construction Contracts Boost South's March Total to \$69,744,000

by  
**Samuel A. Lauver**  
News Editor

**S**OUTHERN construction contracts rose during March to \$69,744,000, the highest monthly total recorded so far this year, making the accumulation for the first quarter of 1944 \$197,484,000.

Increased industrial construction, where the value more than doubled, and engineering contracts slightly above the prevailing level of the two preceding months, were the main factors in the March advance. Private building, with its usual preponderance of residential work, declined. Government building and highway contracts were also down.

The trend of industrial construction last month pointed toward new facilities to provide fertilizer materials, factories to fabricate the nation's synthetic rubber output, and further expansion of the South's power generating systems.

Food production is rapidly becoming one of the world's most acute problems.

Two of the plants announced for the South last month are directly aimed at producing more food and preventing livestock disease. The one will be established on a former shipyard site in Texas. It will produce phenothiazine, an animal worm eradiator. The other will be built at Houston. Its output will be superphosphate and phosphoric acid for the concentrated fertilizer market.

Southern Acid & Sulphur Co., Inc., of

St. Louis, will build the fertilizer plant. E. I. du Pont de Nemours & Co. is sponsoring the phenothiazine project. Part of the site was purchased from the United States Maritime Commission, which recently cancelled a contract for construction of concrete barges there, implying the acute need for such shipping facilities has passed. Other southern shipyards are converting from the slow Liberty ship to the faster and larger Victory ship.

The rubber industry's \$75,000,000 program to provide the facilities necessary to fabricate synthetic rubber was in evidence in the South during March, with a \$250,000 addition to the Natchez, Miss. plant of Armstrong Tire & Rubber Co. being placed under contract. B. F. Goodrich Co. had previously announced a \$5,500,000 plant at Miami, Okla., contract for which has just been awarded.

Construction on southern units of what the Office of the Rubber Director describes as a \$75,000,000 program for manufacture of rayon tire cord continues. Three large operators of southern plants are sharing in the expansion. They are E. I. du Pont de Nemours & Co., Inc., at Amthill, Va.; American Enka Corp., at Enka, N. C., and the American Viscose Corp., at Front Royal, Va.

The tide of southern power plant expansion rose during March. Latest participant in the program is the Georgia Power Co., Atlanta, which revealed that construction will proceed on a \$4,000,000 power plant as soon as priorities are granted by the War Production Board. A 40,000-kilowatt unit was recently added to the company's system.

Announcement of the Georgia plant followed revival of projects in the District of Columbia, Mississippi and Texas. A 50,000-kilowatt unit is being installed by the Potomac Electric Power Co., Washington. Construction has been resumed on a 20,000-kilowatt station by the Mississippi Power Co.

The \$2,000,000 turbo-generator of 20-

## South's Construction by Types

	March, 1944 Contracts Awarded	March, 1944 Contracts to be Awarded	Contracts Awarded First Three Months 1944	Contracts Awarded First Three Months 1943
<b>PRIVATE BUILDING</b>				
Assembly (Churches, Theatres, Auditoriums, Fraternal) .....	\$ 230,000	\$ 1,435,000	\$ 577,000	\$ 390,000
Commercial (Stores, Restaurants, Filling Stations, Garages) .....	54,000	20,000	314,000	131,000
Residential (Apartments, Hotels, Dwellings) .....	2,315,000	630,000	17,763,000	14,371,000
Office .....	14,000	25,000	24,000	20,000
	<b>\$ 2,611,000</b>	<b>\$ 2,110,000</b>	<b>\$ 18,678,000</b>	<b>\$ 14,912,000</b>
<b>INDUSTRIAL</b>	<b>\$28,559,000</b>	<b>\$17,793,000</b>	<b>\$ 52,108,000</b>	<b>\$108,608,000</b>
<b>PUBLIC BUILDING</b>				
City, County, State, Federal .....	\$ 8,918,000	\$13,299,000	\$ 38,552,000	\$136,850,000
Housing .....	8,109,000	3,625,000	20,111,000	80,723,000
Schools .....	679,000	4,244,000	2,446,000	3,319,000
	<b>\$17,706,000</b>	<b>\$21,168,000</b>	<b>\$ 61,109,000</b>	<b>\$220,892,000</b>
<b>ENGINEERING</b>				
Dams, Drainage, Earthwork, Airports .....	\$15,532,000	\$22,581,000	\$ 45,993,000	\$ 70,692,000
Federal, County, Municipal Electric .....	45,000	85,000	229,000	1,477,000
Sewers and Waterworks .....	2,000,000	1,670,000	6,536,000	10,256,000
	<b>\$17,605,000</b>	<b>\$24,336,000</b>	<b>\$ 52,558,000</b>	<b>\$ 82,395,000</b>
<b>ROADS, STREETS AND BRIDGES...</b>	<b>\$ 3,208,000</b>	<b>\$13,534,000</b>	<b>\$ 13,081,000</b>	<b>\$ 26,434,000</b>
<b>TOTAL</b>	<b>\$69,744,000</b>	<b>\$78,941,000</b>	<b>\$197,484,000</b>	<b>\$448,241,000</b>

000-kilowatts capacity under way at San Antonio, Texas, by the City Public Service Board is another project reinstated under the liberalized policy of the War Production Board. Eastern Shore Public Service Co., of Salisbury, Md., plans improvements in generating, transmission and distribution facilities at a cost of \$1,725,000.

Estimates placed the country's 1944 expenditure of private funds for steel plant expansion at \$181,000,000, as compared with the \$230,000,000 spent by these companies during 1943. Several of the nation's large steel centers are in the South and Texas is looming on the horizon of the steel and iron industry. Government expenditures of new iron and steel plants this year are approximated at \$131,000,000, or seventy-five per cent below the total of \$516,000,000 in government money spent during 1943.

From 1940 through 1944, according to the American Iron and Steel Institute, the steel companies have and are spending a total of \$1,151,000,000 for developing new ore mines, building new blast and steel furnaces and for other equipment installations. During the same period Federal expenditures will total \$1,063,000,000. The industry-financed part of the program began almost eighteen months before the United States entered the war.

A recent engineering survey of the industrial construction possibilities in the South indicates an unprecedented wave of expansion, remodeling and rehabilitation will start as soon as restrictions are removed and building materials and equipment are made available.

Seventy-five per cent of the work would be extensions to make entirely new products; 15 per cent, reconversion of existing facilities to peacetime production, and 10 per cent for maintenance construction and repairs. A low percentage of reconversion work was reported due to few plants in the South converting from their regular peacetime pursuits.

The greatest volume of construction was found to be planned in twelve general industrial classifications, all of which utilize the output of the South's farms, forests and mines. These are: Chemicals, fertilizer, pulp and paperboard, food processing and distribution, plastics, newsprint, paper and paper containers, refinery byproducts, glass, textiles, mining and ore reduction, metals, railroads and public utilities.

## first quarter awards total \$197,484,000

Public construction in the first five years following the end of the war is estimated at \$26,000,000,000, or less than one-half of the estimated volume of private construction. This is the forecast of the Producers' Council, whose general chairman, Russell G. Creviston, says the average annual volume of public construction will approximate \$5,300,000,000, of which highway construction is expected to account for two billion.

"Construction of public buildings, water and sewerage systems, school buildings and other essential public projects will amount to \$2,800,000,000 per year," according to estimates released by Mr. Creviston, with industrial construction by the government placed at a nominal figure and military and naval construction on continental United States put at \$280,000,000.

Public residential construction was valued at \$205,000,000 in the prewar year of 1940, Mr. Creviston pointed out, reach-

ing a peak of \$800,000,000 in 1943. A year after the war, however, Producers' Council sees only \$140,000,000 worth of this kind of construction, assuming that the Federal government will carry out its recently announced policy of encouraging private enterprise.

Naval shore construction at the present time, however, will rise under a bill introduced last month in the House of Representatives. The bill provides an expenditure of \$1,500,000,000. One billion dollars of the total would go for advanced base construction, reputedly in the Pacific area.

Providing for both temporary and permanent naval shore projects, the bill lists \$33,351,500 for fleet facilities; \$182,594,000 for aviation facilities; \$72,225,000 for storage facilities; \$20,267,000 for marine corps training and housing facilities; \$96,068,000 for ordnance facilities; \$37,241,000 for personnel training and housing facilities; \$33,636,800 for hospitals; \$3,246,000 for shore radio stations; \$1,273,500 for research laboratories and \$19,475,000 for miscellaneous structures.

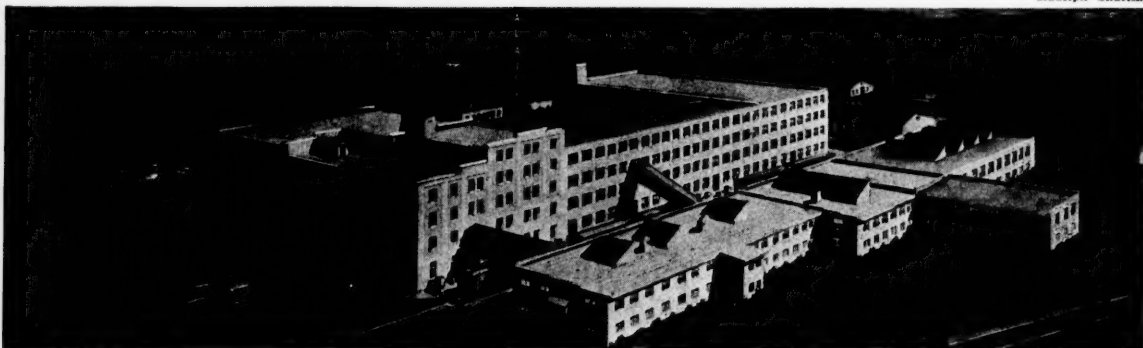
Approximately one-fifth of the total for continental shore construction will be spent below the Mason and Dixon line. Of \$28,622,000 for naval air stations and facilities to support fleet and sea frontier bases on the middle Atlantic seaboard, \$24,550,000 will be in the South. South Atlantic coast work of the same nature will involve \$7,410,000; Gulf Coast work, \$3,900,000.

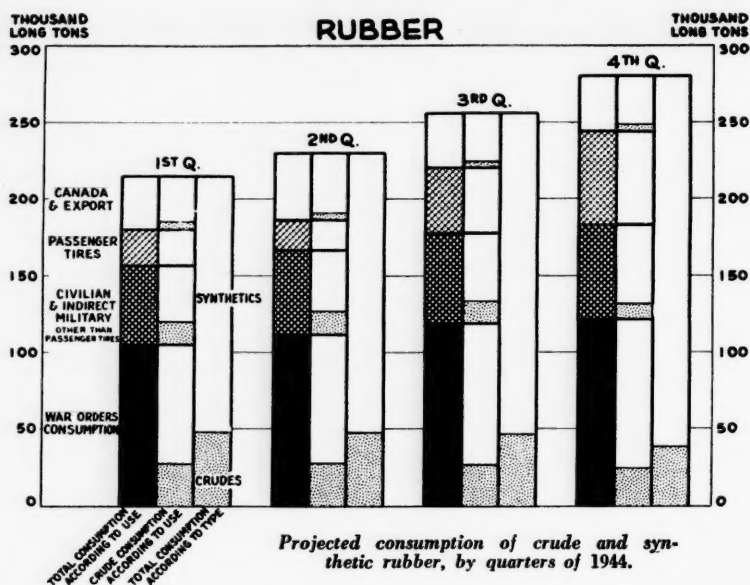
### South's Construction by States

	March, 1944 Contracts Awarded	March, 1944 Contracts to be Awarded	Contracts Awarded First Three Months 1944	Contracts Awarded First Three Months 1943
Alabama	\$ 5,158,000	\$ 3,031,000	\$ 15,905,000	\$ 17,334,000
Arkansas	446,000	1,003,000	893,000	20,751,000
Dist. of Col.	3,507,000	555,000	7,379,000	3,068,000
Florida	6,627,000	16,959,000	26,613,000	46,607,000
Georgia	4,451,000	7,622,000	10,001,000	31,120,000
Kentucky	1,884,000	1,490,000	2,697,000	10,296,000
Louisiana	8,321,000	2,673,000	14,939,000	13,458,000
Maryland	3,112,000	3,001,000	13,462,000	39,009,000
Mississippi	359,000	5,375,000	3,548,000	11,028,000
Missouri	882,000	2,551,000	3,910,000	7,313,000
N. Carolina	1,120,000	2,323,000	6,075,000	15,622,000
Oklahoma	6,753,000	10,141,000	10,744,000	10,832,000
S. Carolina	895,000	2,064,000	6,145,000	16,187,000
Tennessee	2,645,000	8,756,000	6,456,000	23,114,000
Texas	10,413,000	5,944,000	39,219,000	155,471,000
Virginia	6,485,000	3,033,000	20,532,000	30,872,000
W. Virginia	6,691,000	1,820,000	8,966,000	4,748,000
<b>TOTAL</b>	<b>\$69,744,000</b>	<b>\$78,941,000</b>	<b>\$197,484,000</b>	<b>\$448,241,000</b>

Alabama Textile Products Corp., Andalusia, Ala.

Rudolph Shuttig





## Synthetic Rubber Output To Hit Peak This Year

**P**RODUCTION of synthetic rubber under the \$750,000,000 program nearing completion will reach full capacity during the second half of 1944, it has now been made public with the output approaching 868,900 tons, or between two and one-half to three times the production last year.

Primary construction on all of the more than fifty plants included in the original rubber program for manufacture of butadiene, styrene, Buna S, Neoprene and Butyl rubber has been completed, with the three butadiene-from-alcohol plants, two of which are located in the South, running 160 per cent of their

rated yearly capacity of 20,000 tons for each of eleven units.

War demands are insatiable and immediate, the report warned and although the country's rubber factories this year will consume more rubber than ever before, passenger tires for civilians cannot be produced in quantities during the immediate future. Slightly more than 1,000,000 passenger car tires will be built each month up to July and some of these must be held in reserve for unexpected emergencies.

The Rubber Director emphasized four factors upon which these estimates depend. These, he said, are:

1—Completion of all construction and expansion programs on schedule, including the allied \$75,000,000 programs for rayon tire cord, expansion of cotton cord facilities, \$75,000,000 expenditure for new rubber fabricating facilities, and new installations for making carbon black, alcohol and other

needed chemicals;

2—An adequate supply of highly productive labor and well-trained technical staffs, including chemists, chemical engineers and physicists;

3—Freedom from work stoppages and transportation delays at plants making rubber products, synthetic rubbers, rayon and cotton tire cords, carbon blacks, rubber chemicals, alcohol and butylenes.

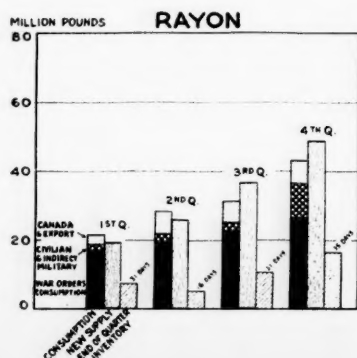
4—Maintenance of crude imports at or above projected levels.

Changes and additions to plants built under the program have required expenditure of about 10 per cent of the original cost. Built during the worst period of critical material shortages in the country's history, the program has developed deficiencies, but "the miracle is that so much has worked."

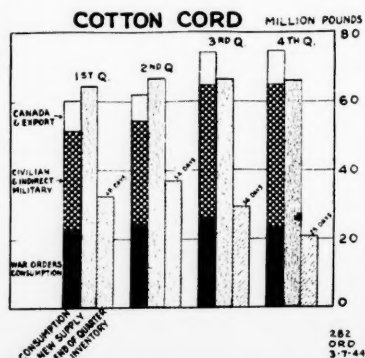
Reconstruction of major sections of five of the plants is under way. Efficiency and economy will be furthered by changes being made in some cases. Increased production will result from removal of bottlenecks in others. The changes and additions are such that they could not have been made until the plants were in production and tried out.

New rubber industry facilities are fully scheduled and under way. The projects call for expenditure by the rubber industry of \$75,000,000 and include installation of 107 new Banbury mixers, together with complementary equipment such as milling, calendering, vulcanizing and molding facilities. These will allow 50 per cent more fabrication of rubber products than was possible last year.

Tire cord and chemicals are the other products needed to support the synthetic program and keep it on schedule. The program for manufacture of rayon tire cord involves



At the right and left are consumption and supply graphs of rayon and cotton tire cords under the Rubber Administrator's 1944 production plan.



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over fifty projects and expenditure of approximately \$75,000,000. These are all reported proceeding according to schedule.

The rubber program, however, could use advantageously the output earlier than it will be available. The situation will continue stringent throughout the year with the anticipated year end inventory of 16,500,000 pounds for both the United States and Canada constituting but a 35-day supply.

The supply of cotton tire cord is also reported as being inadequate. Use of 10,000,000 pounds of nylon will help, if certain technological problems are solved. Even with this material a certainty, the inventory will not be sufficient for operations at the planned rate. It will be necessary to build up a contemplated inventory of 37,000,000 pounds by the end of June and also provide additional cotton cord during the second half of the year.

A supply of rubber chemicals, alcohol used in making butadiene and the benzene used for styrene is assured. The carbon black may not be adequate with the situation in an uncertain state. Furnace carbon blacks are necessary for synthetic rubber but were not largely used in prewar tires made of natural rubber. Seventeen or more projects have been initiated to produce the carbon black.

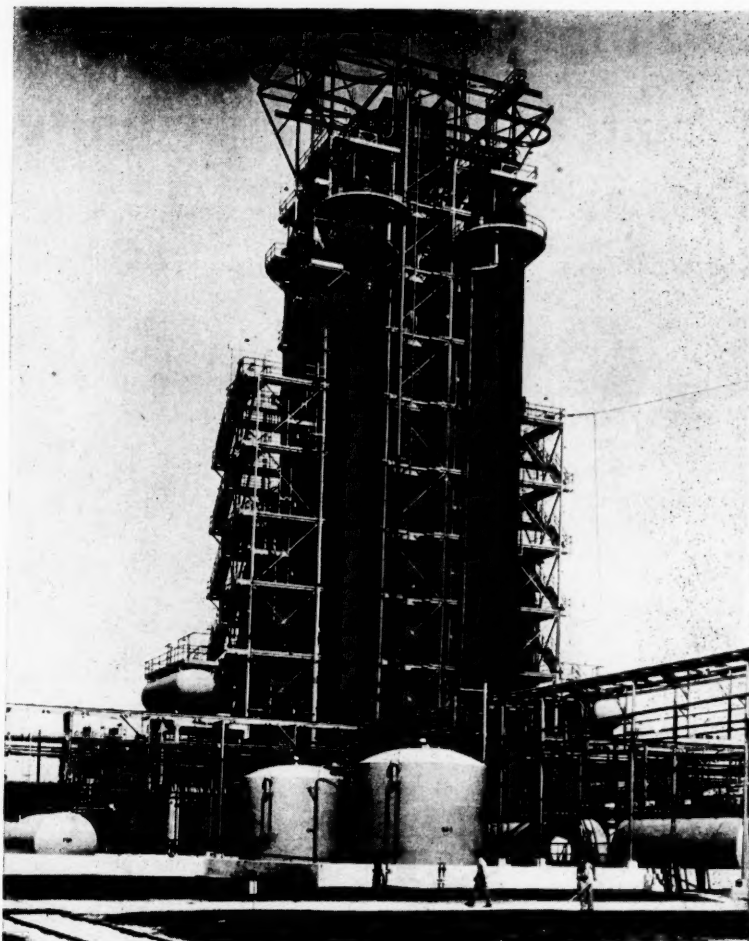
One type of the older "channel" black has been found absolutely necessary as an ingredient in large tires made with synthetics which must withstand heat, particularly heavy duty military and civilian truck and bus tires. The demand for channel blacks by the end of this year will approach twice the prewar consumption.

Manpower continues to be a serious problem throughout the synthetic rubber industry says the report. Production is said to be impeded by shortages in certain critical areas. Labor recruiting procedures are understood to be improving the situation some, with labor and management cooperating on improvement of production efficiency. Stabilization of labor is expected to further improve the situation.

There is every reason to believe that while everything pertaining to the rubber program is a serious and immediate problem it can be solved

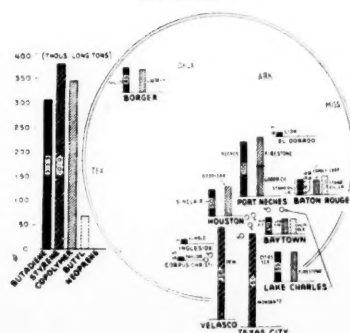
with the continued active military cooperation and that of other government agencies and the civilian population in a real effort to conserve rubber. Subject to no untoward developments, there will be sufficient synthetic rubbers for the manufacture of rubber products to supply the needs of war and our essential home front.

Early in April, Rubber Director Bradley Dewey made a supplementary report on the impact of new draft policies upon the rubber program. All of the operations, he said, involve new and highly technical research, piloting and manufacturing problems. Much of the demand for men came after other war programs had assimilated many of the available technical personnel. Early in the war many joined the armed forces. Today, there are no replacements and, if there were, it would be too late to give them the technical background which those working on the program have gained by training and experience. (S. A. L.)



Above—Plant to make styrene—one of synthetic rubber's two main ingredients—engineered and built for Monsanto Chemical Co. at Texas City, Texas, by Lummus Company, prominent specialists on petroleum refineries, chemical and alcohol plants.

Below—Synthetic rubber production in the South is concentrated in Texas and Louisiana. Such projects are also located in Kentucky and West Virginia. The synthetic rubber making program includes not only the manufacture of synthetic rubber, but also the making of butadiene, styrene and other special raw materials and intermediate products from which synthetics are made.



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# Survey Shows Southern Industries Slated for Unprecedented Expansion

**A**N unprecedented program of industrial construction in the South awaits only the release of materials, according to a market survey recently conducted by The H. K. Ferguson Company, industrial engineers and builders of Cleveland, New York and Birmingham. This survey was conducted by C. W. Roberts, manager of The Ferguson Company's Southern District Office in Birmingham. It is based on answers to a questionnaire circulated to several hundred leading Southern industrialists and scores of field contacts in every Southern state.

To quote from this report, "A program of expansion, remodeling and rehabilitation will start in the South immediately after present restrictions on building materials and equipment are lifted. In many cases, however, it has been disconcerting to learn that there are many people who are confining their postwar planning to conversation, rather than going ahead with actual working drawings."

Tabulations of returns to the questionnaire indicate that the total volume of industrial building will be distributed as follows:

75% for expansion of present facilities and for space in which to manufacture entirely new products

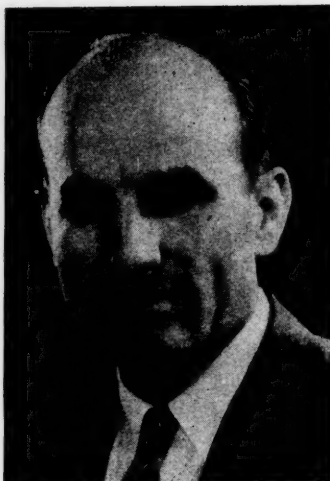
15% for reconversion of existing facilities to peacetime production

10% for "maintenance" construction and repairs.

The relatively low percentage of money to be spent for reconversion work is attributed to the fact that few plants in the South were converted from their regular peacetime pursuits, according to Mr. Roberts.

The following industrial classifications have indicated the greatest volume of future building:

Chemicals, Fertilizers, Railroads and public utilities, Pulp and Paper Board Manufacturing, Food Processing and Distribution Outlets, Plastics, Newsprint, Paper and Paper Containers, Refinery By-



C. W. Roberts

Products, Glass Industry, Textiles, Mining and Ore Reduction, Metal Manufacturing.

Pertinent points taken from answers to the questionnaire follow:

\*A plentiful supply of labor will be available for contemplated construction. Release of shipbuilders will produce a highly trained labor pool from which to draw. The war building program has also trained many additional men in the best building practices.

\*Fertilizer manufacturers who are planning extensions feel that

one pound of American fertilizer which may be handled, stored and shipped easily will readily take the place of several pounds of American food that we will be required to ship to impoverished nations unable to produce enough for their own needs.

\*The South is determined to have its own newsprint mills as soon as possible.

\*A great deal of additional construction will be necessary to process profitable by-products of the petroleum industry.

\*The South needs to process more of its raw materials, and certainly needs to produce more of the things it uses. This would help the South, and "what helps the South, helps the Nation."

\*Projects paid for by private capital should be given the right-of-way in the postwar building program, and projects which do not exhaust our natural resources should be given highest priorities. The recovery of nitrates from the air and magnesium from sea water are notable achievements in this field.

\*Reasonable wages and a reasonable work week should be given utmost consideration. Tax-supported activities should be made less attractive to labor in order that private industry can have first call without being penalized.

\*The Government should get out of active industry as quickly as possible and without too much unnecessary loss.

**Ferguson  
manager at  
Birmingham  
predicts big  
market when  
curbs are  
removed**

## **\$1,000,000 Mining Project to Start in Tennessee**

A \$1,000,000 railroad and mining project in Morgan County, near Wartburg, Tenn., is tentatively scheduled to start operations about April 15, according to C. R. Griffith, vice president and secretary of the Mahan Cheely Coal Co., one of two Southern Coal and Coke Co. affiliates to carry on the operations. The project will mean production of 50 carloads of coal daily, or 50,000 tons a month.

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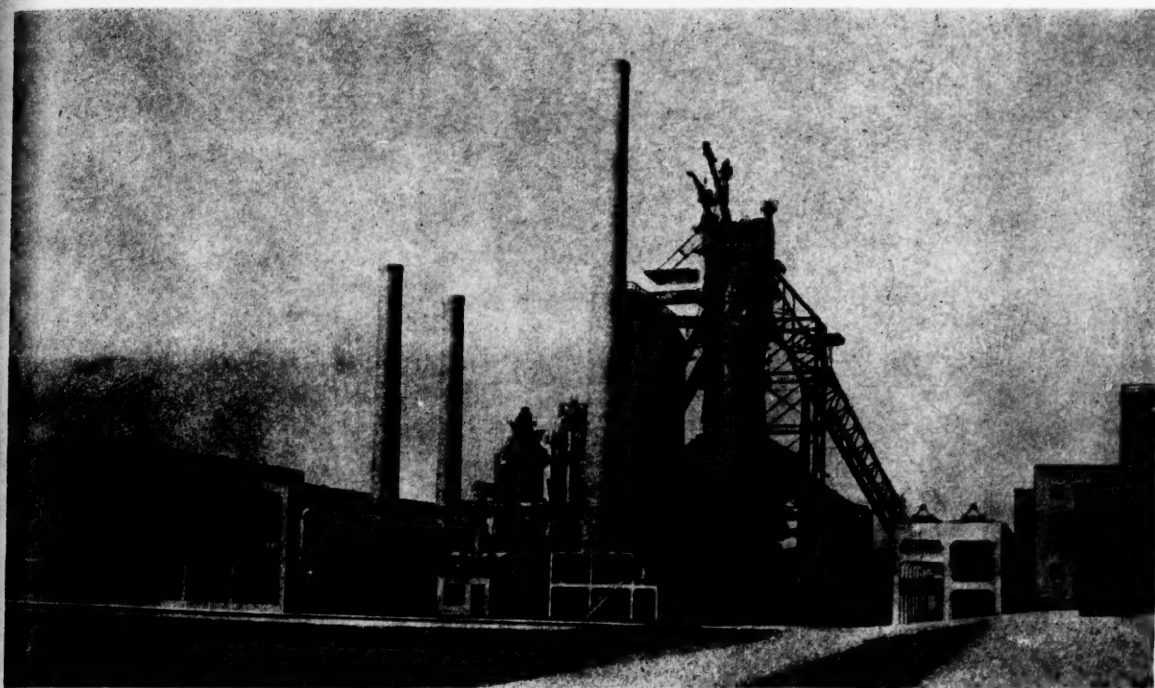
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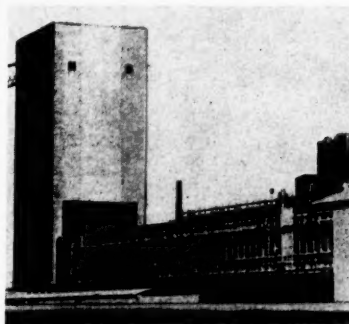


## Texas Iron Plant Ships First Coke

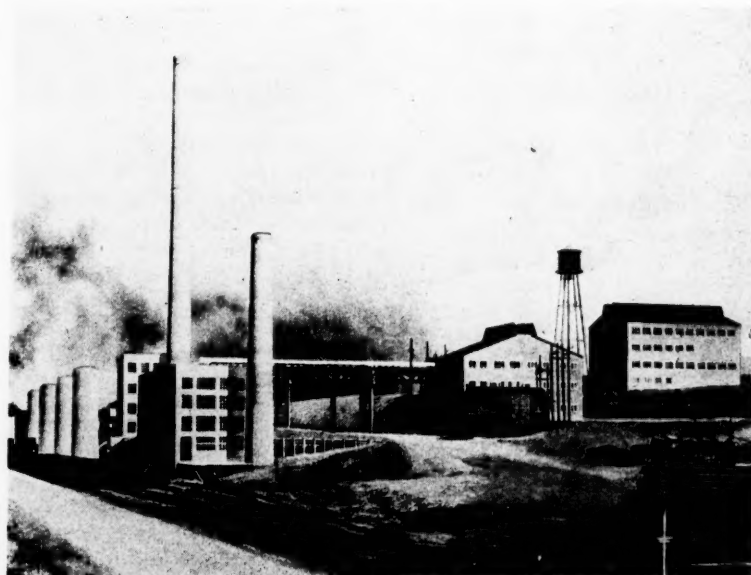
**L**ONE STAR STEEL CO. last month shipped the first carload of commercial coke from its \$15,500,000 plant at Daingerfield, Texas. The coke was made in the battery of seventy-eight ovens which form part of the facilities of the big new East Texas project and was unloaded at nearby Longview for use at the plant of the Kelly Plow Co. The Daingerfield blast furnace plant, which was financed by the Defense Plant Corporation and is being operated under lease by the Lone Star concern, is located at Texas iron ore deposits that are estimated to contain more than one hundred million tons within a ten-mile radius of the site. Capacity of the furnace is estimated from 1200 to 1500 tons of pig iron daily. Oklahoma coal is used. John W. Carpenter, Texas public utility executive, was one of the chief sponsors of the negotiations which resulted in establishment of the plant.

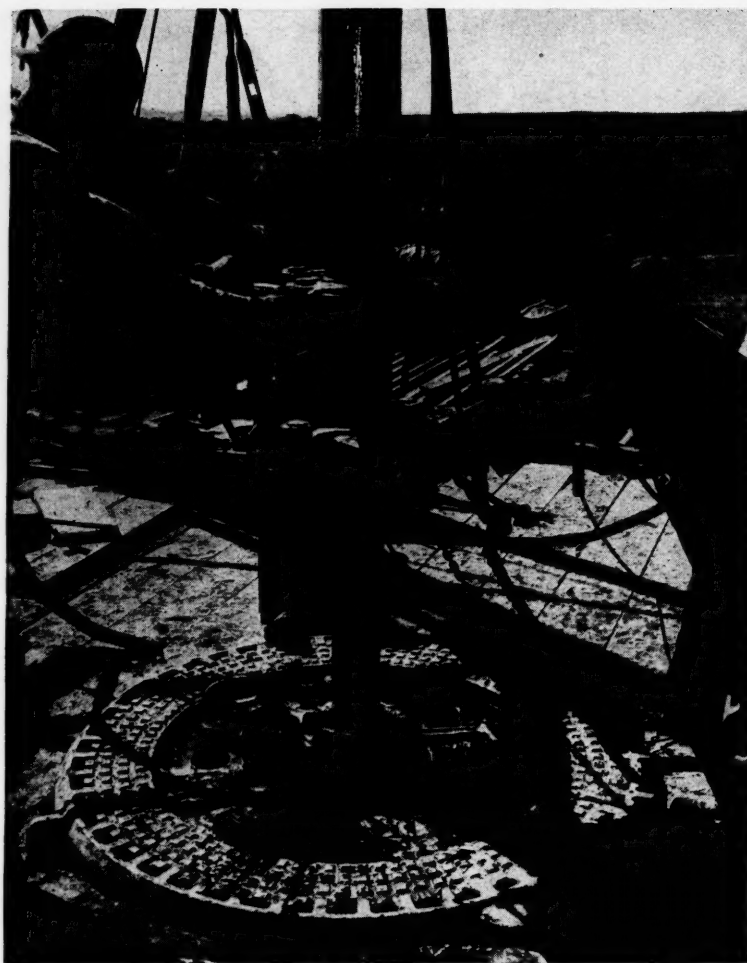
*Above—Ore beneficiation unit of the \$15,500,000 East Texas blast furnace which last month shipped its first carload of commercial coke. Financed by the Defense Plant Corporation, the project is being operated by the Lone Star Steel Co.*

*Right—A view of the seventy-eight coke ovens where the first commercial coke was made. Coal is brought from Oklahoma.*



*Below — Power house, three hot blast stoves, blast furnace at the new Daingerfield blast furnace plant located at Texas iron deposits estimated to contain one hundred million tons of ore.*





*Left—Breaking, or unscrewing a joint of drill pipe. Responsible figures of both private industry and the country's military and naval establishments are looking ahead for oil supplies.*

## Petroleum and Pipelines

*how much  
oil do we  
have—*

*what will  
we do with  
the "inch"  
pipelines—*

WAR, the devastating wastrel of the world's wealth and resources, has focused the spotlight on two subjects in which the South has one of the Nation's biggest stakes—petroleum and pipelines. The question mark in the petroleum situation is, "Will the supply last and how long?", while that with regard to war-built pipelines built to transport Southern petroleum is what to do with them when peace comes.

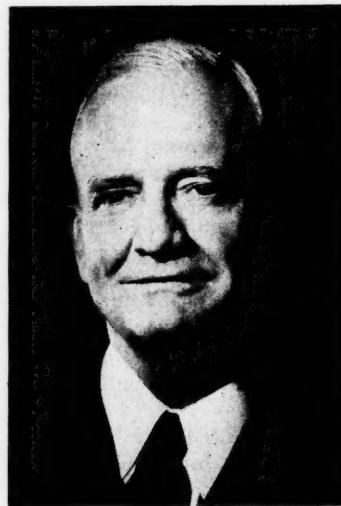
The answer to the supply threat is as uncertain as the charge. Authorities point to the fallibilities of the estimators who have predicted that petroleum reserves of this country will last but a decade or more and that unless new sources are uncovered, the United States will be placed in the uncomfortable posi-

tion of being unable to produce the petroleum that is practically the lifeblood of modern mechanized warfare.

The response to the pipeline perplexity, however, does not involve the basic problem of where to get the petroleum, but how to utilize the two war emergency pipelines—the "Big Inch" and its satellite prototype, the "Little Big Inch"—after current hostilities cease and petroleum can resume its flow to the refineries and distribution points by the normal means of tanker and tank car.

The challenge of a possible oil dearth that would immobilize our military and naval forces is not new. An earlier and loud public discussion occurred during the Teapot Dome controversy of 1923 and 1924. Current discussions are concurrent with expenditure of \$134,000,000 of Federal funds for developing the comparatively small production of the Canol project in the Arctic regions of Canada, and the proposal to build a pipeline to transport petroleum products from the Persian Gulf area to a point on the eastern shores of the Mediterranean Sea, the estimated cost to be between \$130,000,000 and \$165,000,000.

*Below—Wallace E. Pratt, vice president and director, Standard Oil Co. (N. J.)*



*Below—Recovery of shale oil from shale in the future.*



Geologists who have spent their lives searching the wilds and wastes of the globe for the sedimentary rocks of marine origin accepted as oil bearing admit that oil is only found by actually drilling wells into the oil-bearing rocks. One of these scientists—Vice President Wallace E. Pratt of Standard Oil Company (N.J.)—but recently pointed out that more than one million wells have been drilled in the United States and that more than 200,000 of these have been dry holes; in other words, wells that failed to produce in commercial quantities.

Americans, he said, have devoted more thought and effort to finding oil than any other people on earth. The United States is the only part of the earth to be explored for petroleum with any degree of thoroughness and the exploration is far from complete. About one-sixth of the total area of mother rocks of petroleum—those shales or limestones which when deposited on the bottoms of prehistoric seas contained large quantities of animal and vegetable remains—are located in the United States. The balance is spread over the rest of the earth.

He emphasizes that figures on quantities are purely speculation. He did not add, however, that a

much higher percentage of producing wells result from geologic investigations than those drilled on "hunches" and other reasons. The geologist can counsel on where and where not to drill, and, of course, cannot guarantee that a particular well will end up in pool of petroleum.

The April daily production rate of petroleum liquids, as certified by the Petroleum Administrator for War, will be 4,725,000 barrels. a

*Below—Retorting plant for extracting oil from shale, a little known but important future reserve source of oil.*



*Above—Pipelines criss-cross the country's oil fields and carry the liquid black gold to refineries and distribution centers. How these lines are kept clean is shown in the picture above. The oil flows through the pipes pushing a scraper disk before it, scraping extraneous matter from the inside of the pipe. When the oil hits a joint, the scraper is pushed to the dead end and the oil continues along another pipe.*

figure that represents a net increase of 79,100 barrels daily over the March output. Southern participation in the April production, with Texas at the fore with 2,043,000 barrels, will be 2,948,700 barrels, as compared with last month's production of 2,866,000 for the seven southern oil states of Arkansas, Kentucky, Louisiana, Mississippi, Oklahoma, Texas and West Virginia.

Several companies are drilling outside of the states where oil is produced and in several instances have brought in a well in what in the industry would be called wild-cat territory. These new wells are located in Florida and Alabama. Explorations are also being carried out in other southern states — Maryland, North Carolina and Georgia.

Texas, which is not only the South's largest oil producing state, but the country's as well, encourages exploratory work. A resolution passed last year by the Railroad Commission of that state read that such exploratory drilling should be encouraged and additional allowances should be granted to such dis-

*(Continued on page 50)*

## A DEFINITE PROGRAM

Now, what has Mr. May as a business man done as president of Tam O'Shanter to develop it as one of the outstanding clubs of America? He realized that a successful club must offer a distinctive service to its members, which requires that the club first be put in A-1 physical condition. On this premise Mr. May laid out a five-year program, a program for the improvement and development of Tam O'Shanter Country Club.

First a club house was built, and later, according to the plan, many needed additions were made. A watering system, costing \$18,000, was installed. The north branch of the Chicago River which flows through the grounds making seven water holes of Tam's 18 was improved at a cost of \$20,000. Hundreds and hundreds of trees and shrubs were planted, bringing added beauty to a naturally picturesque course. A paved parking lot was laid down. Children's playground equipment and a wading pool were set up. A new caddy house was built. The caretaker's house was remodeled and machinery sheds were erected. New roads, new walks, new bridges, and an outside dancing pavilion were built. A swimming pool, 80 x 35 feet, costing \$26,000, four concrete tennis and shuffleboard courts, costing \$9,900, and a host of other improvements were added. The total investment in grounds and improvements was more than half a million dollars.

George S. May



**B**USY executives of America who look to golf as a means of healthful recreation and a source of renewed energy for the trying problems of production, owe much to an engineering and research genius who has applied to the problems of golf and the golfer the same principles that he has applied to the business and engineering problems brought to him by business clients located in the forty-eight States and the Dominion of Canada. He is George S. May, founder of the American Golf Foundation and President of George S. May Company, Chicago, industrial engineers and efficiency experts.

In 1927, Mr. May, then, in his own words, "A rather mediocre golf player" became a member of a Chicago suburban golf club. He joined to play golf, relax and generally have a good time. There is nothing in the record to indicate how much his golf has improved, but there is much to show what he has done to improve the facilities for playing the ancient Scots game—to keep it alive during the stress of war, without in any way interfering with the

nation's war program. Quite the reverse is true. His contributions to the continuance of the sport have done something worth while to maintain the health of many who might otherwise be without a program for their personal physical fitness.

After a few years of club membership, Mr. May was appointed to the entertainment committee. This experience enabled him to become familiar with the general operations

## Golf, too, Can be a Business

of the club. He noted the yearly changes in the officers, and he particularly noticed that each year red ink was needed to draw a financial statement of the club. Being in the business engineering field these impressions left an indelible stamp on his analytical mind.

Unfortunately — perhaps fortunately, in the light of subsequent events—the club to which Mr. May belonged was destroyed by fire. That was in the Spring of 1937. When the last ember died out there remained a pile of ashes, an empty treasury and a meagre fire insurance policy of only \$24,000. What could be done? One group was for leaving the property to the mortgagee. Another group, among them Mr. May, was more determined. They wanted to play golf and they wanted to play on the present club property. They set up a plan to secure individual pledges of \$500 from the members. Eighty-four \$500 pledges were secured.

The \$24,000 cash from the insurance policy, and the \$42,000 pledged by the members left the club still short \$10,000 of the estimated total necessary to rebuild and put the club in working operation. In desperation the group asked May to put up the \$10,000 and accept the presidency of the club. He turned many questions over in his mind. "Why can't a golf club be run as a business?" "Why should the club directors and officers be changed every year?" and so on. A man of quick action and a man vitally interested in the future of golf, he accepted the challenge, on the basis that as president the members would elect a group of officers who would cooperate and work with him.

Today, nearly seven years later, Mr. May is still president of the club—The Tam O'Shanter Country Club.

(Continued on page 66)

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# Renegotiation

By

**James F. Lincoln**

*President  
Lincoln Electric Company*



*James F. Lincoln*

**R**ENEGOTIATION needs to have the mystery taken out of it. Renegotiation in the mind of the average individual is a means for taking inordinate profits away from war production. Obviously, if this is true every American would be for it. The fact is, however, it does no such thing. It rewards inefficiency and ruins the efficient all at the expense of the taxpayer. Renegotiation is based on profit and profit is determined by efficiency. It is probably laying the corner stone for the communistic or socialistic structure which is the future "planned economy" in the minds of many of our leaders in Washington. If efficiency is to be penalized it will, and is, disappearing. This may be hard to believe after the statements of Roosevelt and others regarding renegotiation. The facts, however, cannot be denied.

Renegotiation is not a new activity. It is almost as old as the industrial system. The average man's experience with it is in connection with piecework.

Here renegotiation is the New Deal name for a very old and much used policy. The previous name for it was piecework price cutting.

Experience on piecework price cutting has been very long and very costly. It has done more to reduce efficiency of production and promote labor-management friction than any other mistake that management has ever made.

The pieceworker originally received a contract at so much a piece. At first he went ahead on the idea that he would get that much for all the pieces he made. However, as soon as his skill increased his earnings beyond a certain point management reneged, or in New Deal terms, renegotiated, the price. Labor thereafter took the obvious course and limited output so that in 99.9 per cent of all factories of the United States limitation of output is a philosophy, disobedience to which results in trouble for the man who exceeds the established limited production.

Let's see how renegotiation affects an actual war contract. Standard commercial products constitute sev-

enty per cent according to Undersecretary of War Patterson, of the total purchases of government for war needs. Suppose, for example, such a product sells at \$100 and as is customary, the same price is made by all manufacturers of the product under an OPA ceiling. As is also generally true, a very efficient manufacturer makes as much as fifty per cent profit on that price. Other lazy and impractical manufacturers make less, even up to a loss. The company making the fifty per cent profit is a profiteer and must be fined in proportion to his efficiency, according to the renegotiation principle.

Let's see now what happens to these profits and the manufacturer. When the ninety per cent excess profits tax is applied on the fifty dollar profit mentioned above, the efficient manufacturer **r e f u n d s** forty-five dollars in taxes and hence, actually sells the product to the government for fifty-five dollars after taxes. The poor manufacturer, since he makes less profit, sells it to the government for various higher prices up to one hundred dollars after taxes. (The new ninety-five per cent excess profits tax still further increases this differential.) This also does not show the further refund to government of the income tax on the five dollars left after the excess profits tax mentioned above.

The efficient manufacturer, who has reduced his price by his efficient manufacturing to fifty-five dollars, is renegotiated and his price reduced still further; in many cases to a point that spells ruin for him after the war. The inefficient manufacturer is not renegotiated. There is no after the war problem introduced for him. As a matter of fact, if he has made little or no profit he is allowed by government to increase his price to above one hundred dollars. Often, also, because of his slow rate of production, he is encouraged

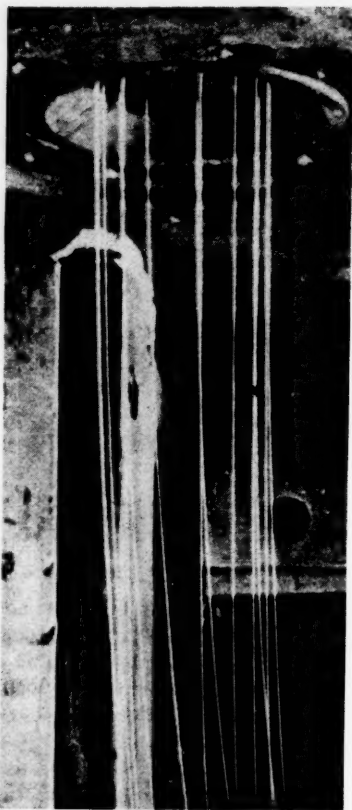
still further to waste the taxpayers' money in additional plant that may still further consolidate his post-war position compared to the efficient producer.

It is obvious that if the efficient manufacturer who sells at fifty-five dollars, after taxes, is going to be legislated out of existence by renegotiation, solely because of his efficiency, he will, within a very short time eliminate his efficient methods. This has already cost the taxpayers tens of billions of dollars. It has also slowed war production with its serious consequences, as our leaders often have stated.

It is extremely easy to reduce efficiency in manufacturing. If we had in our own case worked the usual six days per week instead of seven, taken the usual vacation of two weeks instead of none, because we were told our production was vital, we would have escaped any renegotiation fine. Efficiency is a most difficult accomplishment. It is, however, as we well know, the reason why we are the arsenal of democracy.

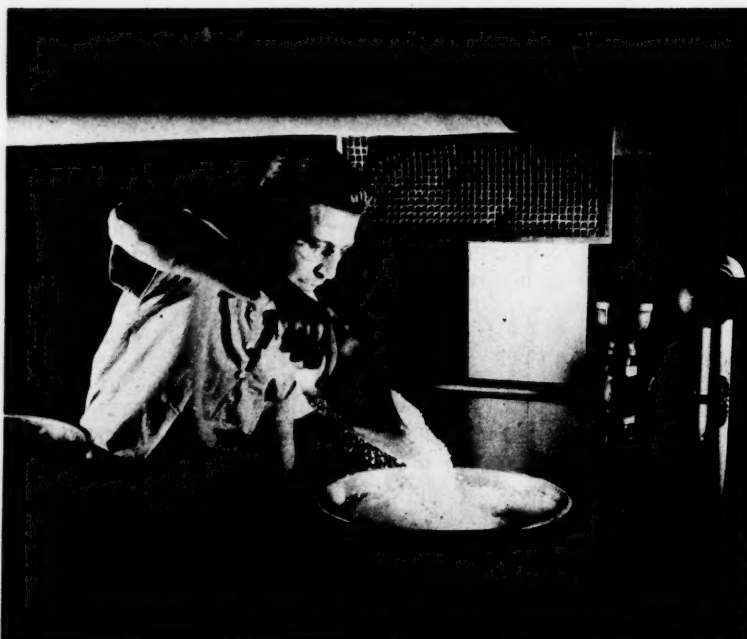
Either your Representatives in Congress and in the White House understand this situation or they do not. If they do understand it their action approaches that of traitors. If they don't understand it, which is probably true, it would be well to put someone there who does. The effects already are cataclysmic to the cost and progress of the war and to post-war reemployment.





*Above—Birth of nylon filaments—from the tiny holes in this spinneret, are extruded the fine strands of nylon, which in turn are wound together to form nylon yarn.*

*Below—Nylon, one of the most recently developed synthetic products, is made from coal, air and water. Nylon in flake form is being fed into the hopper of the spinning machine where it is melted and extruded.*



## Nylon - its producers ready for peace as war needs take entire current output

**B**ELIEF in the future of nylon, the marvel material of hosiery for which women figuratively fought pitched battles before the war, will mean a new establishment deep in the heart of Tennessee, when after this war basic chemicals are turned from channels that mean death and destruction to those to further the country's welfare.

First called Polymer because the two main ingredients contained six carbon atoms each, the substance was christened nylon in 1938, shortly after a pilot plant had been finished to increase its production. The name was "synthesized" after several hundred suggestions had been submitted. It had no etymological significance. It was merely distinctive and easy to pronounce and became a new English language word for an entirely new family of chemicals.

Hosiery made from nylon was put on trial sale in Wilmington in October, 1939, in other parts of the country on May 15, 1940. Success was immediate. During the first year sales of nylon stockings approximated 64,000,000 pairs. By the close of 1941 enough nylon yarn had been shipped to make about 175,000,000 pairs.

Study of nylon as a possible replacement for silk in parachutes started early in 1940. An intensive program during the next year resulted in a yarn satisfactory for escape parachutes. When the Japanese attacked Pearl Harbor and silk supplies were cut off, nylon was ready to step into the breach.

War uses for nylon are strategically important, in many cases confidential. The large volume of yarn, however, is going into parachutes where it has proved superior to silk, according to duPont officials, due to high strength, resilience and resistance to the damaging effects of salt water and mildew. It is not only used in the canopy cloth but also in the shroud lines, harness webbing and belting.

Nylon for tires started early in its history. Four dozen experimental bomber tires were sent to Wright Field shortly before Pearl Harbor and many of them got into action in the Pacific. Rope made of nylon yarn is used for towing gliders carrying troops and cargo.

A nylon pup tent, only one-half as heavy as the conventional type and suitable for both cold and tropical climates, has been developed by the Army Quartermaster Corps. Nylon shoe laces have been adopted for jungle footgear. Nylon cloth of very fine weave is used as a filter in preparing blood plasma.

Part of the duPont company's postwar program, which probably will far surpass the plant extensions

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and betterments involving \$50,000,000 in 1941, \$26,100,000 in 1942 and \$14,600,000 in 1943, exclusive of the \$192,210,000 cost of plants built in the latter year for the United States government, will go to establish new facilities that will put the South on top as a nylon producing section.

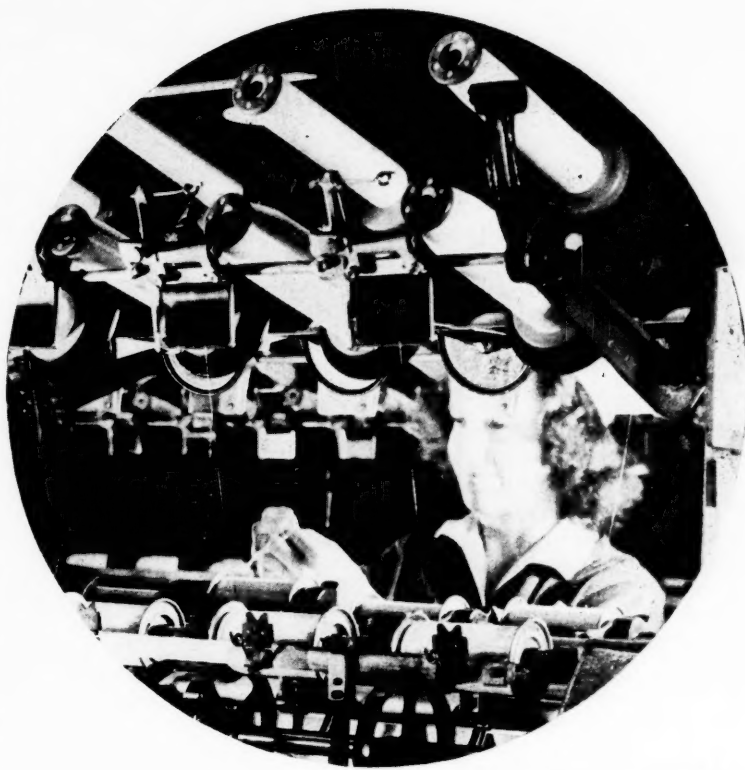
The country's second nylon plant was placed in operation at Martinsville, Va., in 1939, about two years after the heavy demand for nylon practically swamped the first manufacturing plant at Seaford, in Delaware, flat country, not far from the Maryland State line. The third project will be built near Chattanooga, Tenn., if surveys reveal the proper factors.

The basic chemicals of war and peace are virtually identical, duPont officials point out, and it is expected that the new facilities built from company funds during the war period will be largely used for peacetime operations. Indications point to the need for new plants to step production up to demand levels, particularly for nylon where a large unsatisfied demand has accumulated.

Capacities of both the Seaford plant and the Martinsville project are to be expanded considerably, in anticipation of postwar requirements in direct contrast to present output of parachutes, tire cords, glider tow ropes, mountain climbing ropes, tents and other products into which all current nylon yarn is made.

In announcing options on a site near Chattanooga, E. K. Gladding, manager of duPont's nylon division, said the company is planning to enter its long range program for increasing production of nylon yarn as soon as general conditions permit. The Tennessee plant is part of this program. The purpose of considering a site at the present time, while the war is at its height, is to prepare for immediate construction as soon as conditions permit.

The proposed second Southern plant will compare in size with the existing factory at Martinsville. Approximately 1,000 workers would be needed to staff the operation. Chemicals are planned to be shipped from a plant at Belle, West Virginia community which is among others being considered for expanded operations after the war.



Above—Nylon getting its last wind-up before being shipped to converters and throwsters. This machine is one of a large battery that makes the yarn ready for shipment as soon as it is manufactured. The operation, as shown, is being carried out at Seaford, Del., where DuPont established the first plant. A second factory was placed in operation in 1939, about two years after the first. A third is now proposed for a location near Chattanooga, Tenn.

Production of nylon actually starts at the DuPont ammonia department in West Virginia, where high pressure synthesis converts certain gases and coal tar fractions into adipic acid and hexamethylene diamine. Ammonia is one of the intermediate chemicals. The elements entering into these compounds are carbon obtained from coal, nitrogen and oxygen from the air and hydrogen from water. This explains the popular characterization of nylon as a product of coal, air and water.

When the adipic acid and hexamethylene are run together into a stainless steel kettle at the West Virginia plant, they combine to form nylon salt, otherwise known by its scientific name of hexamethylene-diammonium-adipate. For large scale production the salt is made into a water solution for facilitating handling.

The solution is concentrated to the proper salt percentage and polymerization is effected by means of an autoclave. The desired consistency is obtained by carefully controlling the temperature. The viscous material is flowed on a slowly revolving casting wheel, when water

(Continued on page 66)

Below—Every cone of nylon yarn is inspected before it is wrapped and packed. It must be wound just so and must not be soiled. Current production goes into parachutes, shroud lines, harness, webbing. A nylon pup tent has been developed by Army quartermasters and is only one-half as heavy as the conventional type.



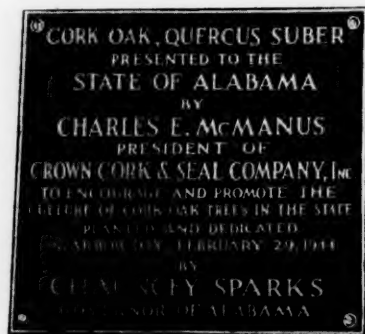
# Cork Oak Trees Planted in Three Southern States

By  
**Giles B. Cooke**  
 and  
**Clifton F. Schimdt, Jr.**  
*Research Department  
 Crown Cork and Seal Company*

**R**ECOGNIZING the importance of a domestic source of cork and the possibility of growing the cork oak in their states, three governors in the South have planted cork trees on the grounds of their respective Capitols. These impressive ceremonies have served to compliment the efficient efforts of the local foresters in planting cork seedlings throughout their states as well as inform additional landowners about the availability of cork seedlings and the value of cork trees. The fact that the cork oak tree can be grown in the South was presented in MANUFACTURERS RECORD, August, 1942. In the eighteen months following this initial report much progress has been made in planting cork trees in the southern states.

On Friday, December 3, 1943, the Honorable Olin D. Johnston, Governor of South Carolina, planted and dedicated a cork tree on the State House grounds in Columbia in a state-wide celebration of Arbor Day. Speaking over radio station WCOS Governor Johnston emphasized the necessity for Forest Conservation at this time and urged the

*Below—Plaques, such as this one on the Alabama Capitol lawn, were placed for the other trees also.*



people of this state to continue planting cork trees. In referring to South Carolina's past record and recent achievements in planting the cork oak, Governor Johnston told his audience: "Our state is the first to have cork trees planted in every county. We are the first to celebrate Arbor Day by the planting of a cork tree in a statewide program. I, as Governor of South Carolina, am happy and proud to be the first Governor to plant a cork oak at Arbor Day ceremonies."

"Cork planting will continue into the postwar period and I urge upon the people of this State to take advantage of this offer. . . . The coming years will find many beautiful evergreen cork oaks throughout the 46 counties of our State. Our Government will be assured sufficient cork for our Army and Navy and other essential requirements. . . ."

The Honorable Chauncey Sparks, Governor of Alabama, planted and dedicated a cork oak tree on the Capitol grounds at Montgomery, February 29th, at the annual observance of Arbor Day. Speaking over radio station WCOV, Governor Sparks called attention to Alabama's important place in timber production and its value to the state and nation.

"We are beginning to realize the value of our tree crop and what it means to the economic welfare of our state. It is therefore indeed appropriate that we set aside one day each year to pay tribute to our trees." In dedicating the cork tree Governor Sparks continued, "We are always glad, with true Southern hospitality, to welcome a stranger into our midst, offering the best we have and a sincere invitation to stay, take root, and multiply."

In a special celebration on March 15th, the Honorable Thomas L. Bailey, Governor of Mississippi planted and dedicated a cork tree on the State Capitol grounds at Jackson. This occasion officially opened an experimental state-wide campaign to grow cork in commercial quantities in Mississippi. Gov-

*(Continued on page 66)*



*Above—Gov. Chauncey Sparks, of Alabama, plants a cork tree on the grounds of the State Capitol at Montgomery.*

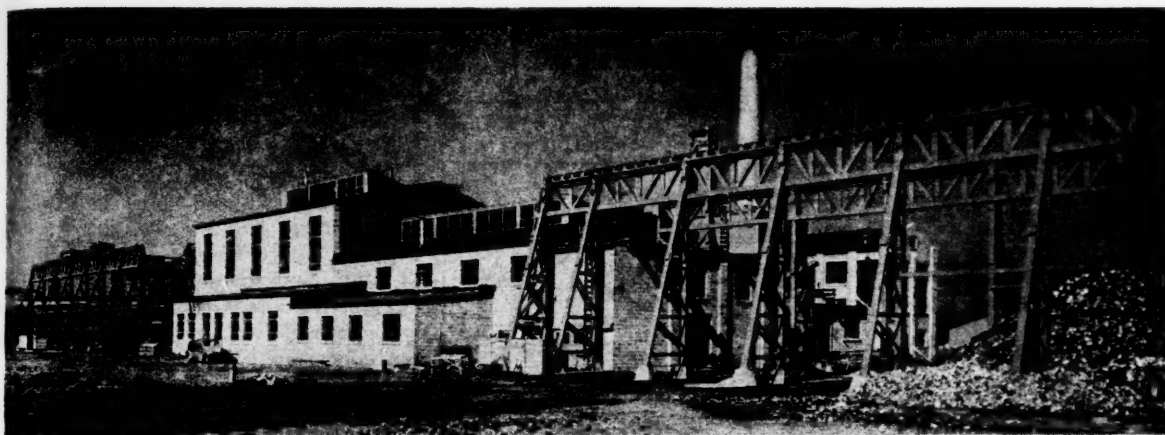


*Above—A cork oak is planted on State Capitol grounds at Jackson by Gov. Thomas L. Bailey of Mississippi.*

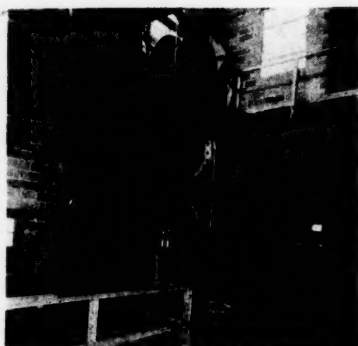


*Above—South Carolina's Governor, Olin D. Johnston, plants and dedicates a cork tree during Arbor Day celebration on State Capitol grounds at Columbia.*





Above—Birmingham's new detinning plant. The overhead cranes in the right foreground expedite handling 20,000 tons of cans annually.



Above—The shredder, where the cans are ripped apart to expose more surface in the detinning operation.

Above—After a trip through an incinerator, the cans are conveyed to this rotary wash screen. A heavy water spray removes charred fragments to prepare for the detinning process.

Below—Where the actual separation of the tin from the steel takes place. In this detinning drum, which contains caustic soda, the tin bearing solution called sodium stannate falls to the bottom and is removed through piping for further processing.

## Birmingham Detinning Plant Now Operating



NOW in operation at Birmingham, Ala., is one of the Nation's largest detinning plants, devoted exclusively to separating tin and steel scrap from containers turned in by housewives in tin collection drives. Operated by the Southern Detinning Company, the plant was designed, built and equipped by H. K. Ferguson Co., industrial engineers and builders of Cleveland and New York.

The plant has a capacity of 20,000 long tons per year and is able to detin approximately 300 million No. 2 tin cans annually. The four principal buildings contain more than 50,000 square feet of floor space, and consist of a preparation building, chemical building, boiler house and office, all of concrete block construction with wood trusses, built with a minimum of critical materials.

Process operations at the detinning plant may be divided into three general steps. The first — can preparation — consists of picking out tramp iron and materials with no tin content, shredding the cans, cleaning them by oven incineration and washing them. This phase removes all foreign matter that may be in the cans or shipped in with them, and results in clean cans for the detinning process.

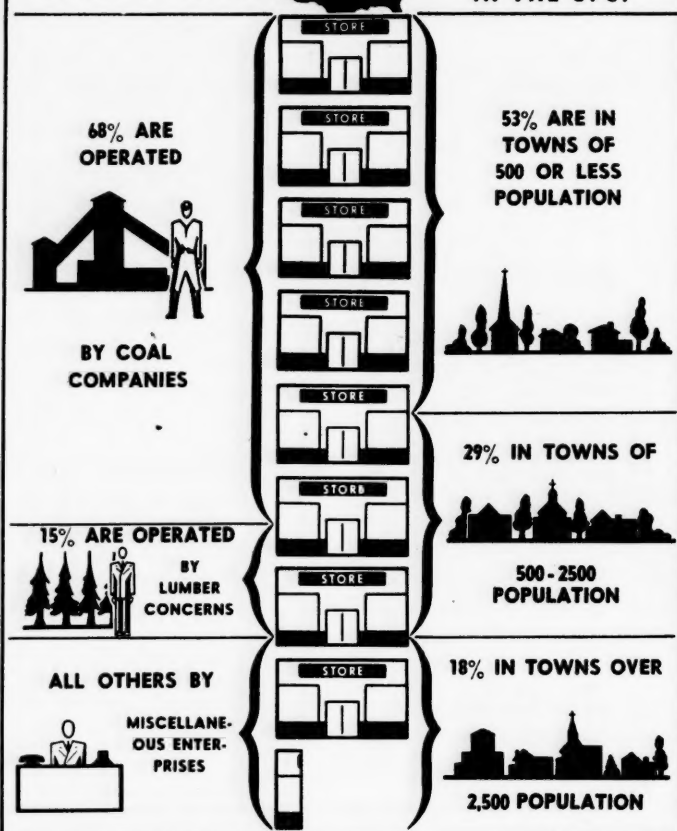
The second step is the actual detinning of the cans and the handling of steel scrap after the tin has been removed. The clean cans are immersed in a caustic soda solution which removes the tin by chemical reaction. The detinned steel cans are then washed thoroughly and finally baled for shipment to the steel mills for use as steel scrap.

The final step in the process is al-

(Continued on page 66)

## INDUSTRIAL STORES IN THE U.S.

THERE ARE **4100** INDUSTRIAL STORES IN THE U.S.



SOURCE: BITUMINOUS COAL INSTITUTE

GRAPHIC BY PICK-S

By

**Paul C. Jamieson**

*Merchandise Manager, Koppers Stores*

THERE are about 2,800 coal company stores in the United States. As an index of their scope, coal company stores last year sold over \$150,000,000 worth of apparel and textiles alone. This included more than 50,000 custom-tailored suits for the coal miners themselves, and over 10,000 fur coats for the miners' wives and daughters. In addition, the coal company stores are now having record sales of nationally advertised brands of merchandise and foods.

The bituminous coal miner is well paid and is thus enabled to enjoy many of the luxuries and conveniences of life. The latest Bureau of Labor Statistics show that, on an average, he makes \$46.24 for a 40-hour work week. The same source

shows that coal miners received the same weekly wages as those earned by the employees of all manufacturing industries in the United States, including shipbuilding and aircraft, but worked an average of 5 hours less a week to earn the same money. Tens of thousands of coal miners make \$300 to \$400 a month. A few even earn about \$600 a month digging coal. Also, the coal miner enjoys much lower living costs than the average city dweller. Generally, he pays about \$15 a month rent for a modern home. A survey of 2,023 bituminous coal miners' homes showed an average rental of \$11.86 a month. This gives him more for spending or saving than many other types of employees. Of course it goes without saying that the coal miner never

needs to be without heat or coal. We do not remember hearing about a bread or a soup line in any coal mining town.

The modern coal company store has undergone a complete transformation during the past generation. Earlier, coal companies had many handicaps to overcome. There were no hard roads and oftentimes the only transportation to coal mining centers was over rough mountain passes. They had to be reached on horseback or by the one-train-a-day coal and passenger train, the primary purpose of which was to haul coal out of the area. Under these difficult handicaps, small commissary stores sprang into existence to fulfill the needs of the coal miners who would locate and live near the mines. Many of the mine superintendents ran these stores in addition to their many other duties. The paramount needs in those days, as far as the stores were concerned, was to buy merchandise of some sort, from some place, get it over the mountains, and place it on the shelves to be sold to the coal miner. Now, super-highways lace these regions. Radios—actual surveys show—are in over three-fourths of the miners' homes. The newest movies are accessible to all coal miners and their families, and periodicals of every description are bought and read by these people. As the life of the coal miner thus changed, so has the coal company store. With a few exceptions it is now a modern, small country department store. Prices have become important. From the findings of an investigator who personally visited over 700 coal company stores, it was learned that prices for merchandise average 10 per cent lower than in New York, Chicago and other metropolitan centers.

Many coal companies realized the need for expert store management. Men from the ranks were given special training in retailing. Display methods, accounting methods and sales programs were instituted by these companies. Trips to New York, Chicago and other large manufacturing centers became more frequent by buyers of these organizations, and, once again, the miner-customer was given the advantage of the latest type of merchandise which was brought to the company store in his

(Continued on page 64)

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# Southern Industrial Expansion in March

## ALABAMA

**ANNISTON**—Plant—Defense Plant Corp. authorized construction and equipment of plant in Anniston, at cost of \$1,200,000; will be operated by Central Foundries Co., New York.

**DECATUR**—Warehouse—A. K. Adams, 542 Plum St., N. W., Atlanta, Ga., has contract at approximately \$85,000 for warehouse for Goodyear Tire and Rubber Co., of Akron, Ohio.

## ARKANSAS

**NORTH LITTLE ROCK**—Canning Plant—White & Dorch Canning Co. leased site, will erect \$75,000 vegetable canning plant.

**PINE BLUFF**—Transmission Line—Arkansas Power & Light Co., been granted a certificate of convenience and necessity by the Department of Public Utilities, authorizing transmission line from Woodward Substation to Lake Village; estimated cost about \$996,000.

## FLORIDA

**CLEWISTON**—Plant—United States Sugar Corp. has approval of Chemicals Bureau of War Production Board for an expenditure of \$2,056,000 for production of ethyl alcohol from sweet potatoes.

**MIAMI**—Distilled Water Plant—F. A. Harris, 501 Ingraham Bldg., plans plant for distilling water.

**MIAMI**—Dock—Florida East Railway Co. let contract to Reed Construction Corp., 1345 20th St., Miami Beach, for sheet piling dock and hydraulic fill at P. & O. Docks, foot N. E. 6th St.; cost \$45,000.

**MIAMI**—Fibre Project—Russell N. Edwards, 2385 N. W. First St., Miami, vice president of Ties and associates plans experimental plant near Lake Okechobee for extraction of fibre by a chemical and mechanical method.

**MIAMI**—Plant—Lombardi Fabrics, Vincent Lombardi, 1000 Sunset Drive, South Miami, plans establishing a fabrics industry and a machine shop for manufacture of knitting machinery.

**MIAMI**—Freezing Plant—Harry M. Lorbach, 121 N. E. 100th St., plans erection of quick freezing plants.

**PENSACOLA**—Buildings—Ellie M. Shoemaker, will reconstruct buildings at 14-16 North Palafox Street; estimated cost, \$30,000.

**PLANT CITY**—Building—Excel Feed Co. and Plant City Growers Assn. reconstruct burned building.

## GEORGIA

**ADEL**—Expansion—Adel Canning and Pickling Co., Ernest Daughtry, Superintendent, erecting an addition to plant.

**ATLANTA**—Expansion—Georgia Power Co. P. S. Arkwright, Pres., Atlanta, plans \$1,000,000 program for construction of 800 miles rural electric lines to serve 3400 farm homes; 510 miles serving 2400 farms, may be constructed during 1944, others to be constructed as soon as conditions permit; projects will be located in various sections of state.

**GRIFFIN**—Expansion—Knox Glass Co., R. R. Underwood, President, plans new unit as post-war project; manufacture glass containers.

**LOUISVILLE**—Mill—Clark Milling Co., reconstructing burned mill at Clark Mill Pond.

**MACON**—Freezing Plant—Bateman Co., C. H. H. Bateman, 321 Poplar St., plans quick food freezing plant.

**SAVANNAH**—Central of Georgia Railway placed orders for 1100 box cars; reported, contract let to Pullman-Standard Car Manufacturing Co. and American Car & Foundry Co.

**SAVANNAH**—Sugar Cane—Niels B. Bach, formerly of Denmark, acquired 600 acres of land on Ogeechee Road conferring with Mills B. Lane, regarding establishment of plant for manufacture of syrup and industrial alcohol—new company will operate as Savannah Sugar Farms and Research Laboratories.

## LOUISIANA

**PIPE LINE**—Texas Pipe Line Co., Houston, Tex., applied to War Department for permit to install and maintain 8-in. pipe line and construct pumping unit platform on timber pile foundation in Lake Dauterive.

**BATON ROUGE**—Expansion—Defense Plant Corp., increased its contract by \$600,000, with Standard Oil Co. of Louisiana for additional equipment at Baton Rouge plant.

**EUNICE**—Rice Drying Plant—L. G. Seale and Adam Smith, incorporated company with \$50,000 capital to establish plant for drying rice; acquired site.

**LAKE CHARLES**—Alcohol Plant—Petroleum Chemicals, Inc., J. E. Fenex, reported, construct \$9,000,000 plant to produce industrial alcohol from waste refinery gasses, to have designed capacity of 12,000,000 gals; location, site of Continental oil refinery.

**NEW ORLEANS**—Mechanical Work—American Heating & Plumbing Co., 829 Baronne St., New Orleans, low bidder for mechanical work in connection with construction of proposed new foundry and hammer shop, etc. for Higgins Aircraft, Inc.

**NEW ORLEANS**—Superstructure—Gervais F. Favrot, Balter Bldg., low bidder for superstructure for foundry and hammer shop garage building and oil storage building for Higgins Aircraft, Inc. at Higgins; bid was \$154,521.

**SHREVEPORT**—Repressuring Plant—Frick-Reid Supply Corp., 3927 Mansfield Rd.,

Shreveport, La., has contract for a repressuring plant to serve entire Haynesville oil field of Claiborne parish for Ohio Oil Co., J. J. Frommer; \$1,600,000.

## MARYLAND

**BALTIMORE**—Addition—Armiger Construction Corp., 2127 Maryland Ave., has contract for addition to manufacturing plant, 1940 Belair Rd., for Albert F. Goetze, Inc.; \$15,000.

**BALTIMORE**—Addition—Holtite Manufacturing Co. let contract to Talles Construction Co., 4024 Bonner Rd., for addition, 417 W. West St., \$25,000; David Harrison, Archt., 421 St. Paul Place.

**BALTIMORE**—Alterations—Consolidated Engineering Co., Inc., 20 E. Franklin St., has contract for alterations to building at 161 E. North Ave.; Lloyd A. Pfeiffer, owner; private plans.

**BALTIMORE**—Boiler Room—Armiger Construction Corp., 2127 Maryland Ave., has contract for boiler room, 800 Key Highway, for James Distillery, Inc., 807 Key Highway.

**BALTIMORE**—Building—United Iron & Metal Co., 630 S. Catherine St., erect building; owner builds.

**BALTIMORE COUNTY**—Building—Baltimore Pure Rye Distilling Co., 111 E. Redwood St., Baltimore, will construct dryer and commercial building, Sollers Point Rd.; United Engineers & Constructors, 1401 Arch St., Philadelphia, Pa., Archts.; \$30,000; owner builds.

**BALTIMORE**—Plant—Davis Construction Co., 9 W. Chase St. has contract for building, 5601 Eastern Ave. for The Pemeco Co.; \$12,000.

**BALTIMORE**—Storage Building—Washington Lumber Co., erect \$10,000 storage building, 1901 Washington Blvd., owner builds.

**BALTIMORE**—Timber Pier, etc.—Arundel Corp., Pier 2, Pratt St., has contract for demolition of shipways construction of timber pier, head house, motor generator building for Bethlehem-Fairfield Shipyard, Inc., Pier 3, Pratt St.

**COCKEYSVILLE**—Alterations—Allied Aviation Corp., A. B. Northrup, Plant Engineer, has contract for alteration to manufacturing building for Harold Williamson.

**OLNEY**—Radio Station—FM Development Foundation, Edwin H. Armstrong, Radio Engineer, filed application with Federal Communications Commission for broadcasting station near Olney.

**QUEEN ANNE'S COUNTY**—Spices—McCormick & Co., Inc., Baltimore, acquired 200-acre island farm, on Parson's Island in Eastern Bay, for determining feasibility of producing spices; tests in production of pyrethrum also will be undertaken.

**SALISBURY**—Improvements—Peninsula Broadcasting Co., plans FM radio station to be built and operated at Radio Park.

## MISSISSIPPI

**NATCHEZ**—Factory—Harmon Construction Co., 1138 N. W. 4th St., Oklahoma City, Okla., has contract for general contract work on tire (Press) factory building for Armstrong Tire & Rubber Co.; Hillard Plumbing & Heating Co., 62 Bartow St., N. W., Atlanta, Ga., contract for plumbing; Shelby Electric Co., 303 E. Hamilton St., Jackson, for wiring; Grinnell, Inc., 1017 Calhoun St., New Orleans, La., for sprinkler system; James T. Canizaro, Archt.-Engr., Capital National Bank Bldg., Jackson.

## MISSOURI

Terminal Railway Association of St. Louis, Mo., ordered 15 Diesel electric switching locomotives from American Locomotive Co., Baldwin Locomotive Works and Electro-Motive Corp., division of General Motors Corp.

**KANSAS CITY**—Building—Acme Lumber (Continued on page 52)

## Contracts Let for Houston Fertilizer Material Plant

THE \$3,400,000 plant to be erected at Houston, Tex., by Southern Acid & Sulphur Co., Inc., of St. Louis, Mo., for the Defense Plant Corporation is being designed by the Dorr Co., Inc., of New York, prominent specialists in research, engineering and equipment.

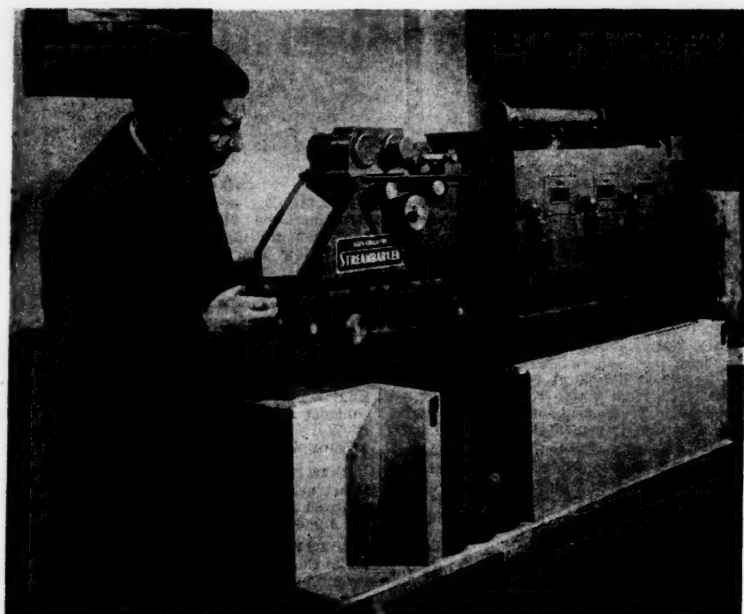
United Engineers & Constructors, Inc., of Philadelphia, have been selected to carry out construction of the project, which upon completion will produce normal superphosphate, phosphoric acid and triple-superphosphate for the concentrated fertilizer market. The new plant will be located on deep water at the Texas port.

The Dorr organization has had a part in many of the large industrial developments of the country. Dorr thickeners recover magnesium from sea water; they



are employed in the manufacture of alumina; they dewater in one instance 25,000 tons of copper tailings daily, and Dorr equipment is widely known in the sewage and water treatment fields.





### Allis-Chalmers Announces Log Barking Machine

(Model illustrated above.)

Allis-Chalmers Manufacturing Co., Milwaukee, Wis., manufacturers of construction equipment, have announced a new log barking machine to expedite the production of pulp wood. The new unit, known as the Streambarker, employs powerful jets of water to remove the bark from logs and clean them. The new machine can process from 10 to 12 cords of wood an hour with a small working force.

Although the idea of barking logs and pulpwood sticks hydraulically is quite old, the new Allis-Chalmers machine is understood to represent the first practical application of the principle.

Many years of research and experimenting with the problems involved, went into design of the machine to bark and clean pulpwood sticks. The unit can process from 10 to 11 cords of pulpwood per hour, and the savings in good pulpwood resulting from the elimination of broom ends, unnecessary axe cuts, and knot boring help to make the operation practical.

It has large waterproof doors on each side of the outer frame for quick accessibility to the interior and is floodlighted from the inside so that logs can be observed while they pass through the machine.

With the first machine in daily operation for more than a year, the Streambarker is ready for application throughout the industry, according to Allis-Chalmers engineers.

### Portable Oxygen Compressor

Walter Kidde & Co., Belleville, N. J., have developed for the Navy a new oxygen compressor to speed recharging aviators' oxygen cylinders. The machine can be driven electrically or by gas engine, and permits the recharging of more cylinders, and at a faster rate than heretofore. A portable unit, now used mainly at Navy bases and aboard aircraft carriers, its use will not be limited to well-equipped airfields or bases. It can be used for compressing any gas having properties similar to oxygen and nitrogen. The compressor and driving motor are mounted on a welded steel base suitable for portable service or for permanently bolting into position. The unit is driven by an electric motor through a V-belt drive which operates a conventional crank and crankshaft mechanism to drive the plungers of a two-stage, water-lubricated, single-acting compressor.

### Duff-Norton Moves Eastern Office

The Duff-Norton Manufacturing Co., Pittsburgh, Pa., manufacturers of industrial jacks, announce removal of their Eastern District offices to 250 Park Ave., New York City from the Empire State Building. George L. Mayer is District Manager of New York office.

### Babbitt Cutting Saw

A power-driven saw designed to speed and simplify cutting the babbitt in bearing linings for large motors is a development of G-E's Pittsfield works. The cut is made from the inside after the babbitt has been cast into the bearing lining, separating it into halves. A rotating cradle holds the bearing in place for the cut. The bearing is rotated until one of the slits for dividing it in two is lined up with the saw by means of a bar guide. The rotating cradle is mounted on slides, enabling the operator to feed the bearing into the saw by means of a hand wheel.

### Guth Light Reflectors

Edwin F. Guth Co., 2615 Washington Ave., St. Louis 3, Mo., is featuring a new line of High-Bays with 30, 60 and 90 degree spreads, providing three-type light distributions with



50 degree direct light cut-off. A new engineering sheet illustrates candle-power distribution curves, with mounting and spacing data for each of the three types. Sizes for 300 to 1,500 watt incandescent lamps and for 400 watt mercury vapor lamps are available.

### Westinghouse Sponsors Forum

Many of the problems confronting machine tool manufacturers and users will be discussed by recognized experts at the 1944 Westinghouse Machine Tool Electrification Forum to be held at the William Penn Hotel, Pittsburgh, Pa., May 1 and 2. Prominent machine tool engineers will explain the requirements of electrical equipment for high speed milling.

Electrical problems relating to design and function of machine tools will be discussed. A portion of Forum time will be turned over to the National Machine Tool Builders' Association for a session on post war standards for electrical equipment on machine tools.

### Republic Steel Mill to be Completed at South Chicago

War Production Board has revoked its recommendation that work be terminated on the construction of a 32-inch rolling mill at the Republic Steel Co.'s South Chicago plant. In addition, completion of such other facilities as are needed to produce shell and other carbon steel in this mill are to be permitted. The plant has a rated annual capacity of 900,000 tons.

### Doran of Ryerson Passes

Fred S. Doran, vice president of Joseph T. Ryerson & Son, Inc., died March 24 in Chicago. One of the most experienced and well-known men in the steel industry, a member of the American Steel Warehouse Association and the American Iron and Steel Institute, Mr. Doran started with the Ryerson company in 1905 as an office boy, working his way through the ranks to the position he held at his death.

### North American Income Up

The Fifty-fourth Annual Report of the North American Company and subsidiaries shows consolidated net income for 1943 amounted to \$19,719,430 after all expenses, interest charges and taxes. This was equal, after payment of preferred dividends, to \$1.85 a share of North American Common Stock, compared with \$1.72 for 1942.

A thirty-one per cent expansion of generating capacity, and the attainment of greater efficiency in the use of facilities have enabled the North American System to supply twice as much electric power as it did before the outbreak of war in Europe. In helping to produce more war materials and to provide them quickly the North American companies have achieved notable records. They were prepared to meet every demand for increased power in such centers as Cleveland, St. Louis, Milwaukee and Washington—not only for war industry, but for heavily increased civilian demands as well.

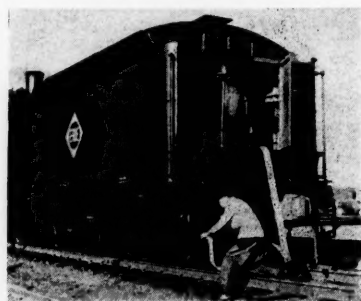
North America's four groups of operating companies have spent approximately \$145,000,000 since 1939, principally for new generating plants and distribution facilities. Although their volume of business has nearly doubled, the war has brought them no financial gain. Payrolls and taxes are the largest items of expense, with fuel for generating electric power next. The fuel bill was advanced both by increased costs of coal and less favorable water conditions in the Middle West, necessitating more steam generation to supplement the hydro-electric output of their Union Electric System.

### Resilient Rubber Mounting

A new type resilient mounting utilizing rubber or rubber-like materials has been developed by Herbert H. Fink, engineer of the B. F. Goodrich Co. Mountings covered by the new invention have cylinders of rubber or rubber-like materials interconnected by arms in S-fashion. This arrangement permits an extremely soft suspension under light load and allows the resilient material freedom of movement in all directions.

### Erie R. R. Adds Foamite Fire-Fighting Equipment

The heavy movement of petroleum products by rail carrier has seriously increased the fire fighting problems of the railroads. The Erie Railroad has added 11 new mobile Foamite fire fighting units to its safety equipment and has incorporated them in wrecking trains stationed at strategic terminals. Eleven locomotive tenders have been fitted up and stocked as firefighters, as shown below.



### Lift Tr

The Hyster capacity, handling, stacked, pneumatic, erating spe, stopping, or floor of tracks, bet and starting floors. Ano is greatly Hyster "20 unit with motor equ fiers. The sible by counterwel high degre developmen pany. Port new lift tr an overall of 71' and

### Gener

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### Martin

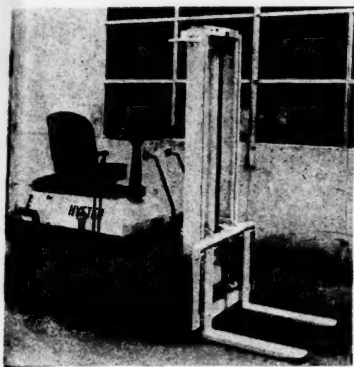
Glenn L. mfacturers of Baltimore boats and ports, repor \$11.15 per sh for the year were a letter to sta of the repo increased at 1942. Net sa as against \$

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# Industrial News



## Lift Truck on Pneumatic Tires

(Pictured above.)

The Hyster "20" lift truck, of 2,000 pounds capacity, is designed to facilitate materials handling where loads have to be carried or stacked and its manufacturers assert the pneumatic tires practically double the operating speed, permitting faster starting and stopping, smoother travel on rough ground or floor obstructions such as cleats and car tracks, better traction for going up ramps and starting and stopping on wet or greasy floors. Another important factor in their use is greatly reduced floor maintenance. The Hyster "20" is a gasoline powered fork truck unit with a 25 h.p., four-cylinder, V-type motor equipped with spark arresting mufflers. The 66-inch turning radius made possible by the unique design of combined counterweight and trunion wheel provides a high degree of maneuverability. A recent development of the Willamette Hyster Company, Portland, Ore. and Peoria, Ill., this new lift truck has a wheel base of 45" with an overall length, not including load arms, of 71" and an overall width of 36".

## General Motors Roll High

Keeping pace with urgent war production, employment and pay rolls of General Motors reached new all-time high levels in 1943. Total pay rolls for 1943 were \$1,321,999,829, an increase of 54 per cent over the previous year. Average monthly employment gained 43 per cent to reach 448,848, with employment at the end of the year at the half million level. Employment of women reached 115,000. A total of \$5,800 G. M. employees have entered the armed services.

## Extinguisher Association Officers

The Chemical Fire Extinguisher Association, at its annual meeting held recently in Chicago, elected the following officers: President, Arthur G. Sullivan, general sales manager, Buffalo Fire Appliance Corp., Buffalo; Vice President, J. O. Blinford, general sales manager, American La-France Foamite Corp., Elmira; Treasurer, Herman W. Diener, secretary, George W. Diener Manufacturing Co., Chicago; and Commissioner, W. J. Parker, W. J. Parker, Inc., New York. Newly elected directors, in addition to the above, are George H. Boucher, general sales manager, Pyrene Manufacturing Co., Newark; and E. A. Warren, vice president, General Detroit Corp., Detroit.

## Martin Earnings Nearly Double

Glenn L. Martin Co., Baltimore, Md., manufacturers of the B-26 Marauder and A-30 Baltimore bombers; PBM Mariner patrol boats and the mighty JRM-1-Mars transports, report 1943 earnings of \$12,437,583, or \$11.15 per share after all charges and taxes, for the year 1943. Earnings for the previous year were at the rate of \$6.01 per share. A letter to stockholders, which formed a part of the report, disclosed that sales for 1943 increased approximately 100 per cent over 1942. Net sales for the year were \$632,163,870 as against \$337,556,000 for the previous year.

## Dustless Treatment of Coal

Bituminous Coal Research, Inc., Southern Bldg., Washington, D. C., has issued an informative bulletin on the use of fuel oils for the dustless treatment of coal. In question-and-answer form, the bulletin was prepared by the research laboratories of Battelle Memorial Institute, Columbus, Ohio, after several months of intensive research in cooperation with leading oil companies and several state insurance inspection services.

## Pittsburgh Glass Earnings Gain

1943 net income of the Pittsburgh Plate Glass Co. amounted to \$13,339,588, equivalent to \$6.06 per share of capital stock outstanding, as compared to \$5.09 per share in 1942. Dividends of \$4.00 per share were paid, as compared to \$3.50 the preceding year. The company is primarily engaged in production for war.

## New Petroleum Frontiers

New Frontiers, a speech delivered by R. T. Haslam, Director, Standard Oil Co. (N. J.), before the Baltimore Advertising Club on the occasion of the dedication of a new 100-octane plant at the company's Baltimore refinery, is available in pamphlet form. Dealing with the progress made in America through private enterprise and the initiative of the individual, it is worth thoughtful reading. Address the company at Room 1204 Standard Oil Bldg., Baltimore, Md.

## New Osborn Sales Manager

Leon F. Miller has been appointed Sales Manager of the Osborn Manufacturing Co.'s Foundry Machine Division, succeeding R. F. Lincoln, resigned. Mr. Miller joined Osborn in 1929 and has spent his entire business career in the sales and engineering fields of that company.

## Lee Joins Harris

Harold E. Lee, formerly with Ingersoll-Rand in the capacity of sales and service engineer for the southern states, has joined the Allen J. Harris Co., New Orleans, La. The Harris company represents Cochrane Corp., American Arch Co., Ames Iron Works, Minks Manufacturing Co., DeLaval Separator Co., Hays Corporation, DeLaval Turbine Co., Northern Equipment Co., Peabody Engineering Corp., Schubert-Christy Corp., Schutte and Koering, United Conveyor Co., Yonmans Bros. Co., and Zallie Bros. & Johnson.

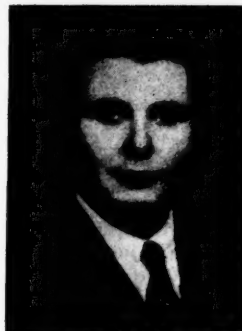
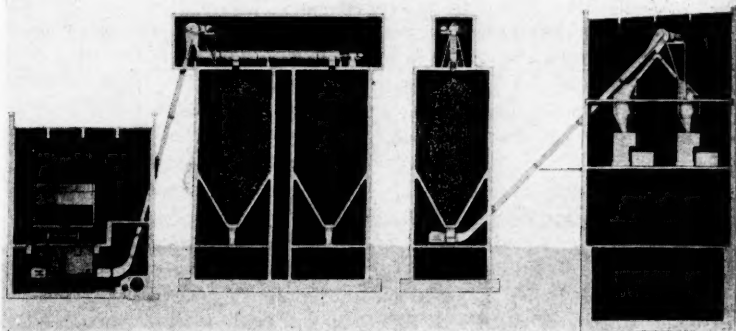
## New Conveyor-Elevator Announced by Chain Belt Co.

Chain Belt Co., of Milwaukee, announces a new conveyor-elevator system to be known as the Rex Uni-Flo. This type of conveyor is a new and unique method for the mass handling of free-flowing bulk materials.

The new Rex Uni-Flo is a conveying unit of the continuous-stream type. It is composed of a chain belt equipped closely-spaced scraper-carrier flight, which operates in an enclosed casing. With the entire cross section of the casing and all the space between the flights solidly filled with the material being handled, a continuous flow of material results.

The new system has many distinguishing features. It has a positive discharge mechanism that definitely removes all material in the conveyor system at the point of discharge. It is completely self-feeding and no auxiliary feeding devices are required. It is self-cleaning and has a minimum of churning and degradation of materials either while in operation or after the feeding has stopped. It operates at relatively slow speeds which means longer life and freedom from maintenance worries.

Flexible in application, it has a wide choice of basic units and few limitations as to layout. It can convey material horizontally, vertically, or at any angle. It offers a direct line of transportation by the shortest possible route to conserve valuable productive space.



T. M. Evans, head of H. K. Porter Co., Inc.

## H. K. Porter Purchases Mt. Vernon Car Co.

Entering the freight car manufacturing field and greatly expanding its Process Equipment Division, H. K. Porter Co. Inc., Pittsburgh, Pa., has purchased Mt. Vernon Car Manufacturing Co. and its subsidiary, J. P. Devine Manufacturing Co. Inc., both with plants at Mt. Vernon, Ill.

Acquisition of Mt. Vernon Car Manufacturing Co., representing approximately 10% of the nation's freight car manufacturing capacity, makes Porter the largest independent in this industry.

J. P. Devine Manufacturing Co. is a maker of heavy chemical, food, and oil refinery equipment. With these facilities, the Porter Process Equipment Division becomes the largest manufacturer in the process field, with a complete line ranging from the smallest agitator to the largest fractionating column.

Recent reports of financial services give Mt. Vernon Car Manufacturing Co. assets in excess of \$10,000,000. The new factories will add more than 90 acres of industrial property to Porter plants now located in Pittsburgh and Blairsville, Pa., and in Newark and New Brunswick, N. J.

T. M. Evans, president of Porter announced the purchase, marking the Company's fourth entry into new fields in recent years.

An active expansion program is planned for Mt. Vernon Car Manufacturing Co., Mr. Evans said, with new types, including a line of tank cars, being added to its present line of box cars, gondolas, refrigeration cars and cabooses. Development of tank cars for better transport of chemical products will be undertaken in cooperation with the Process Equipment Division.

Mr. Evans stated, "Our Company has extensively investigated this field; and is of the opinion that the post-war freight car market contains a potential of 100,000 cars a year for the first five years after the war."

With an experienced staff and a third of a century background in the business, J. P. Devine Manufacturing Co. will add to the present Porter line such products as dryers, fractionating columns, impregnators, vulcanizers, flakers, condensers, besides facilities for manufacturing equipment already produced by Porter.

The Porter Company, since Mr. Evans came to the presidency in 1938, has added its Process Equipment Division to the original locomotive plant; built and is operating a naval ordnance plant at Blairsville, Pa.; and in 1942 purchased Quimby Pump Co., manufacturer of industrial and maritime pumps, plants at Newark and New Brunswick, N. J.

## Petroleum and Pipelines

(Continued from page 38)

coveries. Any producing well completed at a distance in excess of one-half mile from the closest well producing oil from the same horizon may be claimed as a discovery well around which a group or cluster of wells may be started.

"Petroleum reserves are irreplaceable, and each year's production brings the Nation that much closer to an inadequate supply and ultimate exhaustion." Such a statement might have been made during the present controversies. It is, however, included in the hearings of the petroleum investigation made back in 1934, when the country's reserves of recoverable oil were estimated at 13,360,000,000 barrels. "This estimate," the report read, "is based on the most reliable information available. The accuracy of the estimate is subject to the limitation of the available information and the possibility of human error in judgment, reasoning, and calculations."

Mr. Pratt, in his book entitled "Oil in the Earth," published in 1943, observed that there is not any apparent dearth of oil in the earth that need give concern to society. "The probable ultimate oil resources of the earth, made available and freely distributed should meet humanity's needs for 300 years to come. The great difficulty is to establish the social conditions which will enable men to find and develop these ultimate resources."

"Our present proved reserves, world wide, are hardly equal to 20 years' requirements. Americans, who have found the earth's oil in the past, face an even larger responsibility for the future. Other nations simply have not found oil and in a number of these nations American methods of exploration are barred by existing social usages. Yet American methods, machinery, initiative, and, above all, American freedom of enterprise appear to be indispensable to the task of finding oil in the earth."

Opinions on the two war emergency pipelines consider the question both from the viewpoint of petroleum and natural gas. The one has been advanced by T. E. Swigart, president of the Shell Pipe Line

Corp., of Houston, Texas; the other by Sidney A. Swensrud, vice president in charge of production, supply and transportation for the Standard Oil Co. of Ohio.

Mr. Swigart, in his discussion before the petroleum division of the American Institute of Mining and Metallurgical Engineers on the petroleum carrying aspects of the two pipelines, stated that it seems clear that they will have difficulty in meeting competition. "Even if the government were willing to consider its investment returned by savings during the war or were to regard any unreturned part of its investment as monies spent for the war program, the 20-inch lines could not compete with tankers for Gulf to East Coast products' transportation on a marginal or out-of-pocket basis."

"The 24-inch line," he said, "could only meet tanker costs if enough East Texas crude or combined East and West Texas (by direct pipeline haul) were tendered for transportation to give it a high load factor." Mr. Swigart is of the opinion that the government would not consider subsidizing the lines as prudent or justifiable as such action would not only harm business "but could reduce the American tanker fleet and thus conceivably prove more detrimental to the national safety in the future than even the abandonment of the pipelines."

Four possibilities for after-war operation of the two lines—the 24-inch route for flowing crude from Texas to the East Coast and the 20-inch pipe for petroleum products—were reviewed by Mr. Swigart. They are: 1—Purchase or lease by a single existing corporation; 2—Purchase of lines by a new privately owned and financed corporation; 3—Purchase by a new corporation owned or controlled by several oil producing companies; 4—joint ownership by a group of common carrier pipeline companies.

The most obvious use for the lines would be the movement of crude and products from Texas to the East Coast, he said, and for this business they would have to compete with tankers. Despite losses caused by enemy action, the United States

tanker fleet is expected to be large enough at the end of the war not only for this country's needs but for world needs as well. At the time of Pearl Harbor a fleet of 320 tankers mostly of the old type were needed to carry the 1,600,000 barrels per day from the Gulf to the East Coast. About 200 tankers of the Maritime Commission type would be able to transport the same amount.

Government agencies such as the Maritime Commission and the Army and Navy, as well as the petroleum industry, will recognize that the importance of maintaining a strong tanker fleet after the war may be greater than maintaining the war emergency pipelines and the tanker fleet not only will have much greater flexibility in delivering petroleum products to strategic points but also will have an essential place in the nation's oil economy if the United States becomes an importing nation.

Mr. Swensrud, in his discussion of the possibility of converting the two pipelines to transport natural gas after the war, said that problems at the consuming end included burner adjustments, consumer education, line changes and extensions. The problem of protecting the consuming areas against interruption of service due to pipeline breaks is regarded as a serious one.

"From the standpoint of interruptions generally, especially so far as the eastern end of the lines is concerned," Mr. Swensrud sees "very material advantages in putting both of the War Emergency lines into gas service, by reducing the interruption hazard by supplementing the two lines with additional installations at important river crossings, on bad hillsides, etc."

Pointing to the subject of adverse effect on the coal industry, he estimated that to manufacture the gas now being consumed in the New York-New Jersey-Philadelphia area requires around 4,000,000 tons of coal a year, or about six per cent of the estimated 70,000,000 ton total coal consumption of the area. With total coal production placed at 650,000,000 tons a year, the quantity used that would be displaced by use of natural gas in the area would be less than one per cent, according to Mr. Swensrud.

The substitution of natural gas  
(Continued on page 66)



## "Let's See—Where Did We Put That Jones Shipment?"

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**BETTER BUSINESS RECORDS**



# Southern Industrial Expansion in March

(Continued from page 47)

and Manufacturing Co., purchased one story brick building at 1004 Holmes St.; will remodel and install machinery.

**KANSAS CITY**—Expansion—Manley Co., purchased two story and basement building at northwest corner of Nineteenth St. terrace and Wyandotte St., for future expansion.

**KANSAS CITY**—Soy Mill—Ralston Purina Co., Ray E. Rowland, vice president in charge of production, 2334 Rochester St., plans construction of a soybean processing plant at 2310 Rochester St.; capacity of 4000 bu. daily. William Kamp, superintendent of Kansas City plant will have charge of construction.

**ST. LOUIS**—Building—G. H. Davis, 1919 Olive St. has contract for building, 4632 W. Florissant St. for Kilgen Organ Co., 4443 Cook St.; \$25,000; Julius Tarling, Archt., 4114 W. Kossuth.

**ST. LOUIS**—Cooling Tower—Lille Hoffman Cooling Towers, Inc., 4239 Duncan, has contract for cooling tower, \$11,000; Mound City Ice & Fuel Co., 3030 N. 9th St., owner.

**ST. LOUIS**—Factory—H. Kissel's Sons, 4107 W. Florissant St., low bidder for factory building, 2nd. and Penrose Sts. for Don V. Davis Co., 1535 N. 8th St.; J. E. Tarling, Archt., 4114 W. Kossuth St.

**ST. LOUIS**—Improvements—James M. Kurn and Frank A. Thompson, trustees for St. Louis-San Francisco Railway Co., petitioned Federal Court for permission to set \$2,700,000 in a special fund for purchase of freight and passenger equipment and renewal of rails and bridges; fund includes \$750,000 for passenger equipment.

**ST. LOUIS**—Plant—William H. Nelson Cunniff Co., 3320 Lindell has contract for addition to plant, 5145 Natural Bridge for Atlas Tool & Manufacturing Co.

**SPRINGFIELD**—Expansion—General Steel Products Co., L. R. Reynolds, president, Joplin, acquired Woods-Evertz Stove Co. on Jefferson Ave., extending to Robberson, east and west and Phelps and Pine, north and south; will organize a company to be known as General Wesco Stove Co., to plan expansion of plant; work under supervision of Harry Holden.

**ST. LOUIS**—Expansion—American Bearing Co., Indianapolis, Ind., a subsidiary of National Lead Co., 111 Broadway, New York, has taken over property on Flyer Avenue, has a proposed expansion.

## NORTH CAROLINA

**ASHEVILLE**—Building—The Asheville Company, will operate at 17-19 North Market St., for manufacture of cotton dresses for domestic workers.

**ASHEVILLE**—Expansion—Biltmore Dairy Farms, Biltmore, E. D. Mitchell, Mgr., acquired building, 160 Coxie Avenue, plans remodeling, if priorities can be obtained; Anthony Lord, Archt., 17½ Church St., Asheville.

**ASHEVILLE**—Expansion—Hamilton Laboratories, Inc., Logan Thomson, Pres., and Champion Chemical Co., W. J. Damtoft, Sec. Treas. both located 120 Patton Avenue, and both subsidiaries of Champion Paper & Fibre Co., Canton, N. C. plan expansion; the Champion Chemical Co., recently incorporated in North Carolina, is a re-organization of So-Hi Products Co. Inc., manufacturers of So-Hi, a pulpwood by-product; equipment will be removed from Canton to Asheville; Hamilton Laboratories manufactures chemicals.

**ASHEVILLE**—Mill Building—Herman-Sipe & Co., Inc., Conover, has contract for mill for Earle-Chesterfield Mill Co.; Six Associates, Inc., Asheville, Archts-Engrs.

**CHARLOTTE**—Expansion—Arnold Hoffman & Co., 2130 N. Tryon St., plans expansion of chemical plant.

**CHARLOTTE**—Building—Southern Railway System let contract to Southeastern Construction Co., 218 Second St. for building on Liddell St.; headquarters for repairing road machinery for Southern Railway System; \$50,000.

**CHARLOTTE**—Plant—Southern Knitwear Mills, Inc., Fred Stein, President, will manufacture infants knit woolen goods at 724 N. Brevard Street.

**DURHAM**—Plant—Venable Tobacco Co., on Pettigrew St., will build an additional floor to existing building.

**PATTERSON**—Mill—Yadkin Mills, Inc., acquired Patterson Mills in Caldwell County and in Lenoir.

**WILMINGTON**—Acid Plant—Virginia-Carolina Chemical Corp., Murchison Bldg., Wilmington, let contract to Leonard Construction Co., 37 S. Wabash Ave., Chicago, Ill., for 70-ton per day sulphuric plant at Navassa to replace plant destroyed in 1942; L. P. Smith, construction superintendent.

**WINSTON-SALEM**—Locker Room, etc.—Fowler-Jones Construction Co., Reynolds Office Bldg., low bidder at \$134,000 for locker room addition and cafeteria for National Carbon Co.

## OKLAHOMA

**HENRYETTA**—Additional Facilities—Defense Plant Corp. closed contract with Eagle-Picher Mining & Smelting Co., Joplin, Mo., for additional facilities at plant in Henryetta; \$60,000.

**MIAMI**—Plant—B. F. Goodrich Co., Akron, Ohio, let contract to George A. Fuller Co., 597 Madison Ave., New York, for tire plant; work to start at once; estimated cost \$6,000,000.

## SOUTH CAROLINA

**BENNETTSVILLE**—Locker Plant—Marlboro Electric Refrigeration Cooperative,

formed by Paul A. Wallace, Pres., construct freezer locker plant.

**CHERAW**—Plant—Edgemont Manufacturing Co., acquired building for manufacture women's uniforms.

**GREENWOOD**—Expansion—J. B. Carr Biscuit Co. plans expansion.

**ROCK HILL**—Cotton Mill—Dan S. Lafor of Rock Hill and associates acquired cotton mill plant at Red River, between Rock Hill and Fort Mill; will operate as unit No. 2 of Harden Manufacturing Co. with main offices in Gastonia, N. C.

## TENNESSEE

**CHATTANOOGA**—Nylon Yarn Plant—E. I. du Pont de Nemours & Co., Wilmington, Del., considering site near Chattanooga as location of a post-war nylon yarn plant; options have been obtained on tracts of land north side of Tennessee River northeast of Chattanooga; location has been plotted on 2-foot contours; core borings made to determine foundation conditions; proposed plant would be initially comparable in size to company's existing nylon unit at Martinsville, Va.

**ELIZABETHTON**—Factory—J. C. LaRue of Madisonville, Ky., interested in erection of canning plant.

**NASHVILLE**—Improvements—N. C. & St. L. Railway, Fitzgerald Hall, Pres., has final clearance approved by WPB for installation of modern block signal system and centralized traffic control for movement of trains between Nashville and Bruceton; contract for 200 50-ton all steel hopper cars has been placed with Pullman-Standard Car Manufacturing Co., at cost of \$538,000, signal system to cost \$591,000; work to start as soon as possible.

## TEXAS

Pipe Line—Sharman and Allen, Oil & Gas Bldg., Houston, has contract for laying five loops on Gulf Oil Corp.'s pipe line system from West Texas; will aggregate 75 miles of 10-in. line.

**BAYTOWN**—Dirt Work—Brown & Root, Box 3, Houston, have contract for approximately 600 cubic yards of dragline work; General Tire & Rubber Co., Baytown, c/o H. M. Bowen, Engr., owner.

**BAYTOWN**—Reservoir—Tellepsen Construction Co., 3900 Clay Ave., Houston, low bidder for construction of 2,500,000 gallon reservoir, 600 cu. yds., separator and dragline work at the synthetic rubber plant; General Tire and Rubber Co., Baytown, c/o H. M. Bowne, Engr.

**BEAUMONT**—Pipeline—Gulf Oil Corp., Port Arthur, applied for war department permit to place an 8-in. oil pipe line under and across Taylor Bayou, 322 ft. upstream from state highway No. 87 bridge across the waterway at West Port Arthur.

**CORPUS CHRISTI**—Extension—J. W. Birmingham, 601½ Mesquite St., has contract for processing building extension for American Cyanamid & Chemical Corp.; Arthur Hauke, Supt. of Construction.

**DALLAS**—Cafeteria and Maintenance Buildings—National Concrete Co. of Texas, Gulf States Building, Dallas, constructing two steel buildings, Guiberson Corp., 1000 Forest St., Dallas, owners.

**DALLAS**—Shop—E. V. McCright & Co., 700 DeSoto St. has contract, work started, on warehouse and shop, 2200 Lamesa St. for W. B. Williams; \$14,000.

**FORT WORTH**—Bags—B. T. Erwin of Erwin Manufacturing Co., Kansas City, Mo., and associates has site, construct initial unit of cotton, burlap and textile bags.

**GALVESTON**—Shop Building—McDonough Brothers, 2701 Water St., Galveston, has contract for building; Todd Dry Docks, Inc., Galveston, owners; George W. Rustay, Electric Building, Houston, Archt.

**GLADEWATER**—Frozen Locker Plant—R. F. Zimmerman & Co., Shreveport, has con-

(Continued on page 56)

## DuPont Buys Texas Site For Chemical Plant

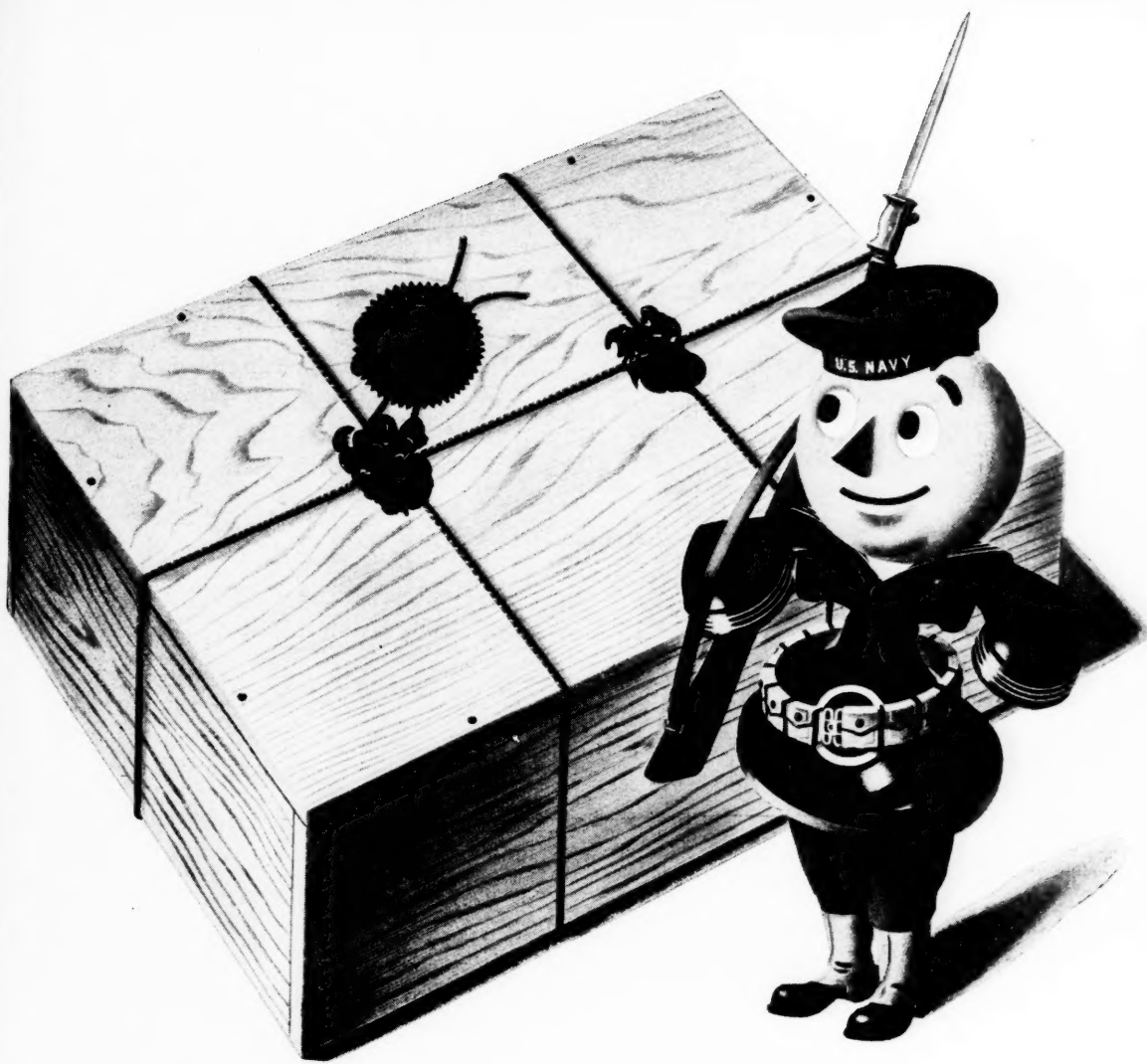
E. I. duPont de Nemours & Co., of Wilmington, Del., has purchased an 822-acre site near La Porte, Texas, including the San Jacinto shipyard, and will start work within a few weeks on a plant for manufacture of phenothiazine, a chemical used for livestock parasitical control.

The new plant will be known as the Houston Works of the Grasselli Chemical Department of the Du Pont organization. Its first production unit will be devoted to large scale peacetime production and is not a temporary war installation. Establishment of additional facilities for making other chemicals is contemplated in the future.

Forty acres of the newly acquired property was formerly the San Jacinto shipyard built for the purpose of constructing concrete barges under the emergency ship program. The purchase price, according to the Maritime Commission, was \$200,000, a value substantially above that placed on the property by an independent appraiser.

The shipyard sale was the first deal consummated by W. L. Clayton, surplus war property administrator, since his appointment several weeks ago. Two adjoining sites were involved in the transaction. Involving 783 acres, these were purchased from H. C. Cockburn, of Houston. They cover an area one-half mile in width and extend three and one-half miles back from San Jacinto Bay.





## IT HELPED WIN A GREAT BATTLE

*Sealed in this box and deposited in the vaults of the Bell Telephone Laboratories is a special device that helped win a great battle. It is being preserved for its historical significance.*

**SUCH** things do not just happen. New instruments of war may appear suddenly on the battle-fronts. But behind them are long years of patient preparation.

Our scientists were organized to have this device ready for battle—just as our fighting forces were organized to be ready for that battle.

Developing secret military devices is a big job but big forces are busy on it, day and night.

Concentrating on this job are more than 7000 people in the Bell Telephone Laboratories. Its scientists and engineers and their skilled associates form a highly organized team, experienced in working things out.

Today's work for war had its beginning many years ago when these laboratories were founded as part of the Bell System's service to the public.

**BELL TELEPHONE SYSTEM**



## American Airline Earnings Up

The annual report of American Airlines, Inc., for the year 1943, reveals a net profit of \$3,192,968.71 transferred to surplus, after provision of \$1,750,000.00 for a transition reserve to cover the cost of the company's transition from War Operations to normal peacetime operations. This compares with net profit of \$3,851,714.38 in 1942 which included \$834,845.75 from the sale of flight equipment at the direction of the United States Government.

Earnings before provision for Federal income taxes and the reserve for transition to peacetime operations were \$8,442,968.71 as compared with \$5,423,868.63 in 1942. The net profit for the year 1943, after deduction for dividends paid on the preferred stock, amounted to \$5.18 a share on the 574,848 shares of common stock outstanding as compared with \$4.88 a share for 1942, after deduction in that year of the net profit arising from the sale of flight equipment.

## Wood Fueled Farm Tractors

When their trucks sputter out of fuel, North Carolina farmers in the future may be able to go out into the woodlot, chuck in a few more wood chips, and roll right on. In a post-war program for North Carolina forestry, Egon Glesinger, Swedish forestry authority, recommends that Tar Heel farmers equip their tractors, trucks and other machinery with wood-gas generators. Admitting that solid fuels probably would not be adopted by urbanites, Glesinger said Swedish farmers already are using satisfactory and economical wood-fueled internal combustion engines.

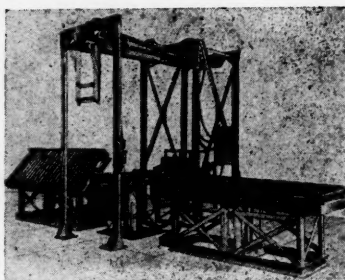
## Pine Lumber Price Increases Authorized by O.P.A.

Office of Price Administration has authorized increases in price of from \$2.00 to \$7.00 per 1,000 board feet in mill ceiling prices of southern common pine board and dimension lumber, and also for southern pine flooring, ceiling, siding, and partition material in the lower-priced grades. The price agency authorized the increases after a study of cost data. Over 75 per cent of southern pine production is being used directly or indirectly in the war effort, with the remainder going for essential civilian uses.

## Invasion Ship Named for Georgia General

The giant invasion carrier, the naval auxiliary, General M. C. Meigs, launched recently at U. S. Steel's Federal Shipyard at Kearny, N. J., is named for General Montgomery C. Meigs (1816-1892), born at Augusta, Ga. Originally an artillery officer, Gen. Meigs transferred to the engineer corps of the army, and during his career in that branch was superintending engineer of the construction of a number of forts. He also superintended the building of new wings and the dome of the national Capitol extension.

## Automatic Pickle Bath Feed



The Lyon-Raymond Corp., 1448 Madison Street, Greene, N. Y., recently developed a special piece of equipment for automatically feeding processed parts to a pickling bath. A large, empty, wire basket is placed on the tilting conveyor table as shown in the left hand view of the accompanying illustration. The table is tilted to place the basket in a convenient loading position and then hydraulically lowered to its horizontal position and the basket of parts rolled onto the elevating table. The equipment is exemplary of the special types of hydraulic equipment that the company's engineering department has been called upon to design and build.

## "Hy-Mac" Hydraulic Test Bench

Hydraulic Machinery, Inc., 12825 Ford Road, Dearborn, Mich., announce a hydraulic test bench, Model T-113, including an intensifier that is capable of developing up to 30,000 pounds per square inch. The hydraulic circuit consists of a 2000-pound per sq. inch constant delivery pump, with approximate delivery of 2 gallons per minute, which is connected to a manifold incorporated in the inlet and outlet of a high pressure intensifier, providing a pre-loading effect. The hydraulic intensifier operates at a ratio of 15 to 1, producing pressures up to 30,000 pounds per sq. inch at the outlet. Remote control, through a hand adjustment, thus makes available pressures up to 30,000 P.S.I. at the manifold.

## Rolling Power for Allied Mechanized Armies

Special milling machine designed by engineers of Bendix Products cuts production time 75 per cent in the mass output of the new Bendix-Weiss "constant velocity" universal joint, which now equips more than 500,000 United Nations multiple-drive military vehicles. The revolutionary "constant velocity" universal joints utilize ball-bearing principles to transmit torque from differential to driving wheels.

## A. C. F. Appointments

William R. Kottseper appointed Manager of the valve department of A. C. F. has been with the company for 38 years. W. A. Gormley and L. A. Ward have been appointed sales manager and assistant sales manager, respectively. W. Lyle Richeson has been appointed assistant vice-president.

## NEW ELECTRICAL MAINTENANCE BOOKLET

A 28 page booklet of convenient pocket size entitled "Care and Maintenance of Electrical Equipment" and containing simple instructions for keeping switches, panelboards and switchboards in good operating condition is available. The book contains a parts ordering list of Square D Electrical Equipment, illustrated. May be obtained without cost from Square D Company, 6000 Rivard St., Detroit 11, Michigan.

## PLASTIC TUBING FACTS—

A new illustrated catalog has been issued by the Irvington Varnish & Insulator Co., Irvington, N. J., describing their fibronized extruded plastic tubing. Included in the catalog are a number of data sheets describing characteristics and applications of a number of products.

## COMBUSTION CONTROL—

Leeds and Northrop Co., 4834 Stenton Ave., Philadelphia 44, Pa., manufacturers of Metermax combustion controls for boiler furnaces, announce a new and revised catalog. No. M-01M-163, that will be of especial interest to those desiring information on metered systems of combustion control.

## Allis-Chalmers Releases Film on Surface Condensers

Allis-Chalmers Manufacturing Co., Milwaukee, Wis., have released a new motion picture, "The Surface Condenser" as a sequel to its educational film on steam turbine operation, "The Magic of Steam."

It shows the step-by-step construction and operation of a modern surface condenser. The condenser's part in the steam cycle of a power plant is explained by diagram, cut-away view, and animation.

Running time of the condenser film alone is 18 minutes, making a full 40-minute program on turbines and condensers, free from advertising, when the film is used in conjunction with Allis-Chalmers' "The Magic of Steam." It is a 16 mm film, for use on sound projectors only.

The film is being loaned free to industries interested in showing it, particularly for training programs. To borrow or purchase the films, write the Company.

## Piston Ring Division Outlook

"The post-war outlook of American Hammered Piston Ring division of Koppers Company is encouraging, since the same products are being manufactured in their expanded factories for war use as were made to a lesser extent prior to the war," says Allen W. Morton, vice president. "Unusual developments in the use of chrome plated Piston Rings and in the development of bronzes will no doubt be an asset for future business."

"Most of the chrome plating is now done for the aircraft industry, but in the post war period will be applicable to Piston Rings for the truck, bus, tractor, and farm machinery business. Similarly, the bronze sealing Rings developed during the war will have a future in the automotive, Diesel, and other transportation fields."

"The time for conversion from war work to post-war work will be comparatively short, since most of the tooling used prior to the war is still on hand and rapid conversions can be effected."

## Van Horn Retires

Benjamin Van Horn, salesmanager of Harnischfeger Corp., manufacturers of cranes, retired recently after 47 years' service. He joined Harnischfeger as a stenographer in 1896, advancing through the sales ranks. It was his skillful guidance of the crane division that helped the firm maintain a position of leadership through the years. He was tendered a banquet by officials and co-workers that was attended by friends from all parts of the country.

## Armco Founder's Day

The birth date of the late George M. Verity, April 22nd, will be known as Founder's Day and observed by The American Rolling Mill Company organization throughout the world. Observance of the day will take a unique and appropriate form. The intent is to inspire Armco men and women on Mr. Verity's birthday to do something to help some person or cause as he or she chooses to do. They can do something to "help the other fellow" or not, as they wish. Their "good turn" need only be a simple thing which will in some way contribute to human happiness. This unusual theme was inspired by a quotation of which Armco's late founder was fond—"He lives most who serves best."

## New Vice-President of Mullins

Harry M. Heckathorn is the vice-president in charge of production of Mullins Manufacturing Corporations, Salem and Warren, Ohio plants, succeeding Howard F. Kulas who is resigning because of ill health. Mr. Heckathorn has had thirty years experience in the stamping industry, starting at the age of 19 with the Best Stove and Stamping Co., of Detroit.

## Quick-Start Fluorescent Lamps Planned by Westinghouse

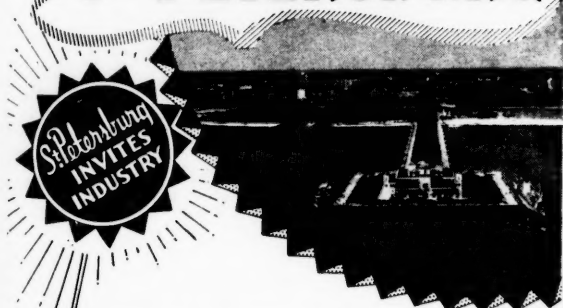
Westinghouse Lamp Division, Bloomfield, N. J., has announced plans to manufacture an instant-starting 40-watt fluorescent lamp having the same rated life as the standard type of fluorescent lamp using conventional ballasts and starters.

# There's Opportunity in ORLANDO

After the war Florida will be the opportunity state of America, and Orlando is the opportunity center of Florida. This community of some 60,000 population is located in the center of the Sunshine State, accessible by train, plane and highway to all raw materials and leading markets of this area. Favorable living conditions. Moderate living costs. For statistical data and special information, address Greater Orlando Chamber of Commerce, 152 Chamber of Commerce Building, Orlando, Florida.

OPPORTUNITY CENTER OF  
**FLORIDA**

## Take a Look at.. ST PETERSBURG



While you are engaged in post-war business planning, it will pay you to investigate the opportunities offered by St. Petersburg, Florida, the dynamic "Sunshine City." This community, second largest resort center of the South, is also interested in attracting and developing light industries. Many advantages in markets, materials, labor, and living conditions combine to make St. Petersburg particularly attractive for certain types of selected industries. For booklet, "St. Petersburg Invites Industry," write Industrial Department, Chamber of Commerce, St. Petersburg, Florida.

**ST. PETERSBURG** *Florida*  
THE SUNSHINE CITY

APRIL NINETEEN FORTY-FOUR

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COMPANY, 55 Marsh Bldg.,  
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POSTS, BRIDGE AND DOCK TIMBERS

Treating Plants—Jacksonville, Fla., Norfolk, Va., Long Island City, N. Y.



# LUNKENHEIMER VALVES

whatever type..mean better service



Fig. 16  
"Renew" Globe

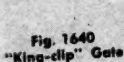


Fig. 1440  
"King-clip" Gate



Fig. 2125  
Bronze Gate



Fig. 1430  
Iron Body Gate



Fig. 1938  
Steel Gate

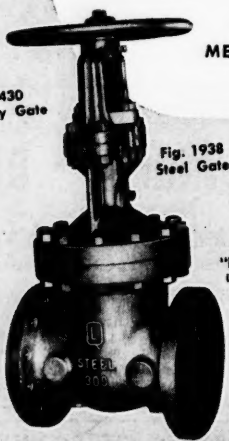


Fig. 123  
"N-M-D" Globe  
(Non-Metallic Die)

SIMPLICITY OF DESIGN  
MEANS EASIER MAINTENANCE

BRONZE, IRON, STEEL AND CORROSION RESISTANT ALLOY VALVES, 125 TO 2500 LB. S.P.;  
BOILER MOUNTINGS, LUBRICATING DEVICES, AIRCRAFT FITTINGS

In the heavy duty that Lunkenheimer Valves are doing on every front—industrial, maritime, army and navy, chemical, petroleum, synthetic rubber—a prime attribute is lasting quality . . . that inherent quality that comes of correct engineering, simplicity of design, and "know-how" manufacturing born of long experience.

These features in Lunkenheimer Valves are proving a boon to maintenance crews, in uninterrupted performance, low maintenance expense, and ease in making necessary repairs . . . in short, better service.

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**THE LUNKENHEIMER CO.**  
"QUALITY"  
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NEW YORK 13 CHICAGO 6  
BOSTON 10 PHILADELPHIA 7  
EXPORT DEPT. 318-322 HUDSON ST., NEW YORK 13, N. Y.

## Industrial Expansion in March

(Continued from page 52)

tract at \$27,929 for frozen locker plant.  
**HOUSTON**—Boiler House—James G. White Corp., 9700 Q St., plans structural steel mill building over present open-air boilers; private plans; owner builds.

**HOUSTON**—Fertilizer Plant — Southern Acid & Sulphur Co., Inc., Rialto Bldg., St. Louis, Mo., Joseph Mullen, Pres. plans \$3,000,000 fertilizer plant to be located on deep water at or near Houston; contract has been entered into between Southern Acid and Sulphur Co., Inc., and Defense Plant Corp. for construction of the plant.

**HOUSTON** — Office and Shop — Helm & Bouffle, 911 Stuart St. has contract for office and shop building, Katy Rd. for Crutcher-Rolfs-Cummins, Neils Esperson Bldg.; Harvin Moore, Archt., 2008 W. Alabama Ave.

**HOUSTON**—Plant Additions—W. G. Goggan, 1116 Banks St., Houston, has contract for blower room and warehouse buildings; 2620 Maury St.; American Brake Shoe and Foundry Co., 2620 Maury St., Houston, owners.

**HOUSTON**—Plant—Douglass Sulphur Co., 12 Daly Place, plans reconstruction of burned plant.

**HOUSTON**—Plant — Walles Dove-Hermiston Corp., Westfield, N. J., erecting \$35,000 plant, 7001 Clinton Drive; Wigton & Abbott Corp., Melle Esperson Bldg., Engr. and Contr.

**HOUSTON**—Plant Foundation—William A. Burnet, Shell Bldg., Houston, has contract for construction of plant addition foundation, on Clinton Road; private plans; American Smelting & Refining Co., Clinton Road, owners.

**HOUSTON**—Shipyard — Maritime Commission announced an acceptance of an offer of \$200,000 for purchase of San Jacinto shipyard at Houston by E. I. du Pont de Nemours Co.; new owners will adapt the plant for preparation of phenothiazine; construction and adaption of certain present shipyard facilities is expected to begin soon.

### VIRGINIA

Seaboard Air Line Railway, Norfolk, granted permission by Judge W. Calvin Chesnut, to purchase 200 coal and 200 box cars at cost of \$1,370,000; cars will be purchased from Pullman-Standard Car Manufacturing Co.

**BENTONVILLE**—Plant — Stauffer Chemical Co., has applied to War Production Board for approval to erect a carbon bisulphide plant.

**BUCKINGHAM** — Frozen Food Storage Plant—Mayor J. B. Hanes, Dillwyn, Chairman of Committee, will erect plant.

**CULPEPER** — Freezing Plant — Culpeper County Agent J. A. Coffey, interested in erection of frozen food locker plant.

**FAIRFAX**—Locker Plant—Southern States Cooperative plans erection of frozen food locker plant in Fairfax County; capacity of 400 lockers; materials and equipment for plant approved by WPB.

**RICHMOND**—Cars — The Chesapeake & Ohio Railway Co., let contracts to following firms for 5,000 fifty-foot steel hopper cars at cost of \$8,500,000; contracts placed with American Car & Foundry Co., Huntington, 2,500 cars; General American Transportation 1,250; East Chicago, Ind.; Pullman-Standard Car Manufacturing Co., Michigan City, Ind., 1,250 cars.

### WEST VIRGINIA

Improvements—West Virginia Coal & Coke Co., C. B. Gleaves of Cincinnati, Ohio, assistant to Charles Dorrance, plans multi-million dollar program, including construction of coal tipples, streamlining of other facilities at its Omar, W. Va., operations; contract for construction of tipples has been let to Fairmont Machinery Co., Fairmont; coal from

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the shafts of West Virginia Coal & Coke Co.'s 4 mines in the Omar mines, 3, 4, 15 and 19, will all be processed at the new tippie; new tippie will increase daily production from 6000 tons to 10,000 tons; will be equipped with crushers and vibrating screens to produce stoker coal; extensive relocation of C. & O. trackage will be required; one contract of several involved was for \$1,500,000; necessary permissions and priorities have been received.

**CHARLESTON** — Kanawha Valley Gas Company chartered with \$500,000 by G. M. Clark, 148 E. 54, New York, to operate.

**CHARLESTON**—Radio Station — Valley Broadcasting Co., Joe Matthews, Mgr., acquired site for postwar construction of 2000-seat theatre and new quarters for radio station WGVK; \$200,000.

**HUNTINGTON** — Plant — Frank Messer & Son, Inc., 2515 Burnet, Cincinnati, Ohio, has contract for \$1,000,000 factory for Sylvania Electric Products, Inc., Clarence Wagner, Williamsport, Pa., Archt.

### Small Business Concerns Play Important War Roles

Hundreds of small manufacturing concerns are playing an important role in getting American merchant ships delivered on schedule, according to the Maritime Commission.

During 1943, 50.2 per cent of contracts over \$10,000 awarded by the Commission's Procurement Division went to plants hiring less than 500 employees. These small concerns scattered throughout the United States received 2,452 of the 4,881 construction material contracts let during the year. Of 6,990 sub-contracts let by shipyards on Maritime Construction, 4,733 or 67.7 per cent, were handled by small business firms.

The Maritime "M" Award, given for outstanding production in meeting all schedules, high quality workmanship and excellent cooperation, has been awarded 128 manufacturing plants since April, 1942. Sixty of these are small concerns with less than 500 employees.

The following list shows small southern businesses which have received the Maritime Commission's "M" Award, number of employees, and product manufactured for the merchant ship program:

Baltimore Copper Paint Co., Baltimore, Md., 340, marine paints.

Beaumont Iron Works, Beaumont, Tex., 324, castings.

The Combustion Engine Co., Inc., St. Louis, Mo., 397, drums for ships boilers.

C. Lee Cook Manufacturing Co., Louisville, Ky., 240, packings for Diesel engines.

Enterprise Wheel and Car Corp., Bristol, Tenn.-Va., 350, castings.

Goldens' Foundry & Machine Co., Columbus, Ga., 275, steering engines.

Koppers Co., (Bartlett-Hayward Division), Baltimore, Md., 260, propellers.

Stevens Sash and Door Co., San Antonio, Tex., 274, joiner work.

W-K-M Co., Inc., Houston, Tex., 251, valves.

R. D. Cole Manufacturing Co., Newnan, Ga., 307, king posts and masts.

### Industrial Silver Consumption

Industry consumed 118 million ounces of silver in 1943, about 71 million ounces of which was used by industries essential to the war effort. Domestic production amounted to 40 million ounces while imports totaled 63 million.



## POWER COSTS ARE PART OF PRODUCTION COSTS

**C**ERTAINLY you must consider future power cost in your plans for meeting postwar competition. Not only the cost but also the availability of **adequate** power.

Tennessee is one state that offers either hydroelectric or steam-generated power in abundance. The giant hydroelectric system of TVA will have a postwar maximum capacity of 18 billion kwh available at the **lowest rate in Eastern America.**

The four thousand square miles of coal-producing fields, with short hauls to every section, insure economical steam-power generation.

Low-cost power is only one of the many advantages to plant locations in Tennessee. Check the other **basic** advantages listed.

Manufacturers interested in meeting changing conditions, increasing population shifts, and postwar competition should investigate Tennessee now.

Write for specific information and surveys relating to your particular requirements. Ask for illustrated book: "Tennessee—Land of Industrial Advantages."

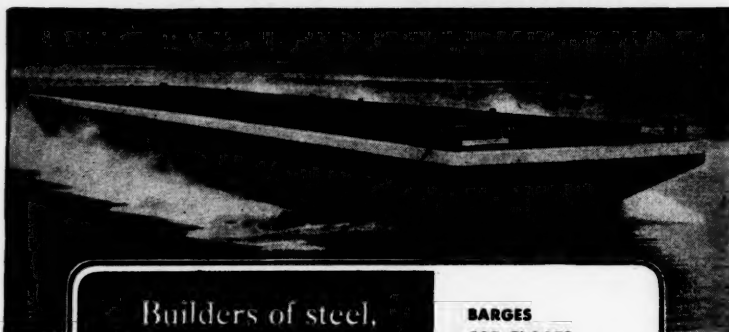
### Basic Advantages To Plant Locations In Tennessee

- ★ An unsurpassed variety of major industrial minerals and agricultural products.
- ★ Huge coal reserves making possible economical steam-power generation.
- ★ An inexhaustible supply of industrially suitable water.
- ★ Inland waterway system of three great rivers for low-cost transportation to Midwest, Gulf, and World ports.
- ★ Central location permitting 24-hour delivery to more than 51% of the Nation's population.
- ★ Excellent railway, highway, and airline transportation.
- ★ Cooperative skilled and semi-skilled native-born labor.
- ★ Opportunity for low-cost assemblage of raw materials or manufactured parts.
- ★ Uncongested plant sites near basic materials, river and rail terminals.
- ★ Ideal living conditions for both employer and employee.
- ★ Sound State tax structure. No personal earnings or sales taxes.
- ★ State and municipal governments friendly to industry.

Governor's Industrial Council, Department of Conservation  
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THE FIRST PUBLIC POWER STATE

One of a large fleet of coal barges developed especially for river use.



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all-welded and riveted  
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for rivers and  
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DERRICK HULLS  
DREDGE AND  
TOWBOAT HULLS  
STEEL DRY DOCKS  
GATES  
LOCKS

Ways at Ambridge, Pa., and Trenton, N. J.

## AMERICAN BRIDGE COMPANY

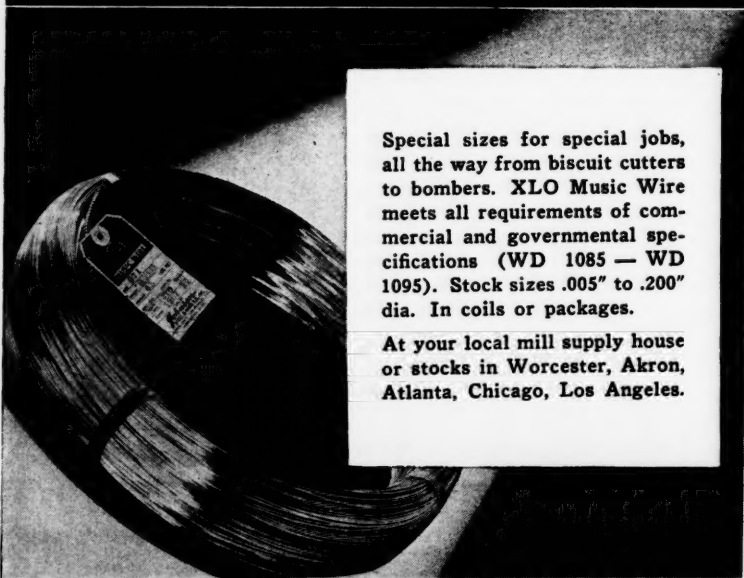
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UNITED STATES STEEL

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all the way from biscuit cutters  
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At your local mill supply house  
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JOHNSON STEEL & WIRE CO., INC.

WORCESTER 1, MASSACHUSETTS

NEW YORK ATLANTA AKRON CHICAGO LOS ANGELES

## Savannah & Atlanta Profit Up

In the Fifth Annual Report to its stockholders, the Savannah & Atlanta Railway Company shows operating revenues for 1943 of \$2,120,252.24, exceeding by \$315,165.13 the figures for 1942. Net income for 1943 amounted to \$382,814.56, an increase of \$137,932.70.

President C. E. Gay, Jr., points out that the road is the result of the consolidation and connecting of several sections of railroad, parts of which were built as logging or sawmill railroads without a view to future common carrier operations. With the development of industries at Port Wentworth, Georgia, this connect-link link, making a through route to Atlanta and the Central States, permitted the railroad to enter into a new phase of development, and through traffic began to be the major source of revenue. Grades were revised and in some instances, change of location of the railway, to compete for business and handle it profitably.

Future improvements include grade revisions and replacement of twenty wooden trestles with reinforced concrete and steel structures, besides further purchases of locomotives.

## Liberty Ship Named for Noted Southern Editor

The Liberty ship, Clark Howell, launched at the yards of the Southeastern Shipbuilding Corp., Savannah, Ga., honors the memory of the late Clark Howell, for many years prominent in southern journalistic circles. He was long an executive of the Associated Press and served a number of terms in the Georgia Legislature. He was speaker one term and President of the Georgia Senate for six years. Mr. Howell was outstanding in his efforts for the industrial development of Georgia and the South. A graduate of the University of Georgia, he joined the staff of the *Atlanta Constitution* in 1883, advancing through the ranks until he became general manager and controlling owner.

## Callaway Elected to U. S. Steel Board of Directors

Cason Jewell Callaway, of Hamilton, Ga., has been elected a director of United States Steel Corporation to fill the vacancy created by the death last year of James A. Farrell. Mr. Callaway was president, then chairman of the board of Callaway Mills, of La Grange, Ga., from 1920 to 1938. For many years he has occupied a prominent place in the textile industry of the nation, serving at various times as President of the Cotton Manufacturers Association of Georgia and as President of the American Cotton Manufacturers Association. He retired in 1938 as the active head of Callaway Mills to enable him to devote his time to the development of additional profitable cash crops for the South.

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In Canada: The

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# The Arundel Corporation

## BALTIMORE, MD.

### Dredging—Construction—Engineering

Distributors of Sand-Gravel-Stone and Commercial Slag

#### A COMPLETE ORGANIZATION

Our complete organization with years of experience in successfully executing large construction contracts of various kinds is prepared to undertake the construction of earth, masonry and concrete dams, drydocks, dredging of all kinds, river and harbor improvements, deepening channels, hydraulic filling and rock work, tunnels, railroad construction, sewers and waterways.

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GEORGE H. PACOT, Vice-President in Charge of Materials' Production  
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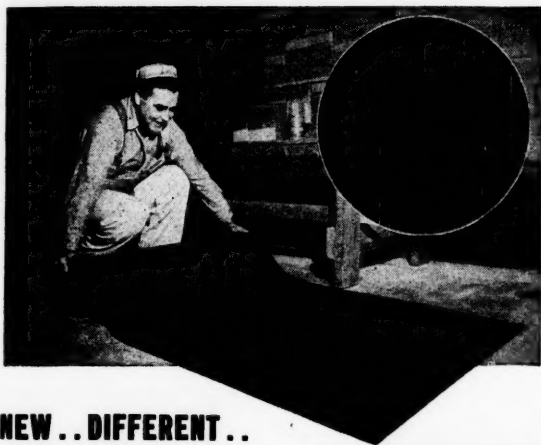
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CORRUGATED FLOOR RUNNER

Inexpensive — non-skid — resilient — wear resistant — waterproof. It is a composition material with ribbed surface and rubber-like appearance. Lays flat — stays put. Just the thing for use in theatres, stores, offices, shops, halls, basements, recreation rooms — for saving floors in model or demonstration homes... for any surface where an inexpensive, easily-handled floor covering is required. Available in rolls 36 inches wide, 30 feet long. Write Dept. 61 for samples: prices.

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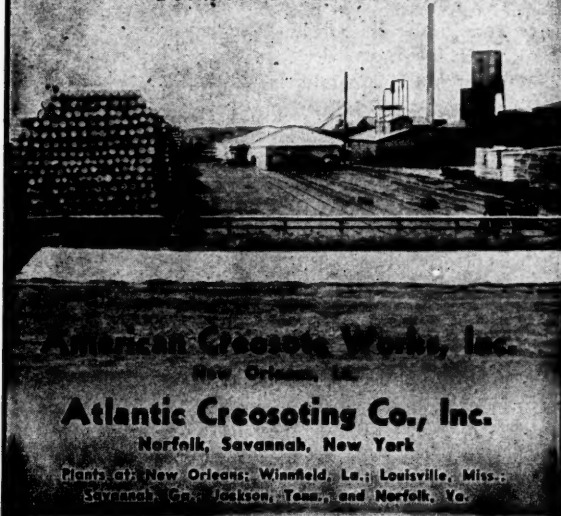
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New Orleans, La.

**Atlantic Creosoting Co., Inc.**

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Branches: New Orleans, Winfield, La.; Louisville, Miss.;  
Savannah, Ga.; Jackson, Tenn.; and Norfolk, Va.



# What About Our Huge Federal Debt?

(Continued from page 29)

people and institutions who wish and require safety of investment. We might not attempt to reduce the debt below fifty billion dollars. But it might require a hundred years to bring it down to this level.

There appear to be some real dangers, impossible to calculate at this time, in the attempt to embrace again the good old American principle of rolling up our sleeves and jumping in to reduce the Federal debt as rapidly as possible. One is that the prospect of a very heavy tax burden for 75 or 100 or 125 years may so discourage a sufficient mass of the American people that they will be ready to take their chances with those who will be waiting and ready to hand them slick, sleight-of-hand, and supposedly "painless" schemes under which they can "avoid" paying back-breaking taxes "forever"—such schemes as devaluation of the dollar, the issuance of fiat money, partial or full repudiation in some other manner.

Another danger lies in the fact that an attempt to tax sufficiently heavily to embark with genuine earnestness upon a program of debt retirement may discourage and repress productive enterprise and incentive. This must not be permitted to happen. The road to recovery and to better things, for ourselves and for other countries, will be found in a great expansion in productive activity and in the encouragement of incentive in all its worthy forms. If a choice must be made between getting greater production and having taxation sufficiently heavy to retire the debt, we should not hesitate to decide in favor of the former. A great resurgence of optimism regarding private enterprise and an unprecedented production are what we shall need above all other things.

Such a decision would, of course, lead us to adopt the principle of a permanent or indeterminate debt on which we would plan to pay only the interest charges, except as receipts from sales of public property and unexpected surpluses which

may occur from time to time are used to reduce the debt.

The adoption of such a policy also involves very real dangers: Despite our hopes, another war may come. The probabilities of having to experience business depressions are very great. The reduction of the tax burden will constitute an invitation to a renewal or continuation of heavy public spending, particularly if spenders, such as those we have had since 1933, are in power.

Nevertheless with these dangers in mind, and despite them, it seems highly probable that this debt policy may provide the safest and best way out of the great difficulty in which we shall find ourselves when the debt reaches its peak. At that time the people will need, and doubtless will demand, relief from the abnormal and excessive burdens they will have carried during the period of the war, under pressure of the realization of necessity and the stimulation of patriotic fervor. At that time, also, both this fervor and sense of necessity will undergo radical change, and properly so. Relief from unnecessary, if not unbearable, tax burdens, and a return to production for peaceful pursuits will be the consuming desires that should be recognized and encouraged.

It should be understood that discouragement, because of the adoption of some fiscal or other governmental policy, can take hold of the American people to such an extent that they will be willing to listen to the Siren songs of the devaluationists and advocates of fiat money. Such experience has been common, and we are not immune to it. Indeed, we succumbed to some degree to the seductions of the advocates of such policies during the years following 1932, and such devices are still being employed in ways too clever and subtle for the general public to appreciate.

If the blue atmosphere of discouragement and depression should settle down on the American people when our debt reaches its peak, the devaluationists can be counted upon to emerge in full force with a set of arguments that will sound impressive and inviting to a distressed peo-

ple. It is quite clear that the general public will not be able to understand the fallaciousness of those arguments; nor will they be interested in resisting such an invitation to embark upon the primrose path leading to a national financial blackout.

The American people did not understand the devaluation of our dollar in 1934, and few of them understand it after a period of ten years. They do not know what the arguments for it were in 1934; they do not yet understand their validity or lack of validity; and they apparently will not be prepared to meet the new arguments in behalf of a radical devaluation of our dollar "to save our people from disaster" that can and may be presented when our debt reaches its peak.

Let us make no mistake about this matter: the arguments in behalf of a radical devaluation of the dollar to pay off our Federal debt and "to free" our overburdened and oppressed taxpayers can be made to sound impressive to the uninformed. It will be the opponent of devaluation that will have the hard job. His task will be to defend honesty and real values. He will be unable to offer ease to the depressed; he will be able to offer only hard work and sweat and tears and discouragement.

If scruple and honesty be pushed to one side by the clever advocate of radical devaluation of the dollar, it should be easy for him to back any opponent into the corner in so far as a general audience may be able to understand the situation.

Assuming that the debt will have reached the commonly-predicted peak of 300 billion dollars and that the people will be thoroughly discouraged and demand radical relief, the principal arguments that an unscrupulous and demagogic advocate of dollar devaluation could use effectively are, in brief, the following:

The Federal debt of 300 billion dollars is chiefly a question of assets versus liabilities in the balance sheet of the United States Treasury. On the liability side is the Federal debt of 300 billion dollars. On the asset side are 22 billion dollars of

(Continued on page 62)





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### Railroad Purchases Greatest In Fourteen Years

Purchases of fuel, materials and supplies by Class I railroads of the United States in connection with their operation were greater in 1943 than in any year since 1927, announces J. J. Pelley, President of the Association of American Railroads.

Such purchases in 1943 totaled \$1,394,281,000, an increase of \$134,470,000 compared with 1942. In 1927 purchases of fuel, materials and supplies totaled \$1,395,928,000.

Purchases increased 10.7 per cent between 1942 and 1943. Part of this increase was due to increased prices, which averaged about 7 per cent higher in 1943 than in 1942, and the remainder was due to greater volume purchased.

Class I railroads in 1943 expended \$527,296,000 for fuel compared with \$426,335,000 in 1942. For bituminous coal only, their purchases totaled \$375,398,000 or an increase of \$62,611,000 compared with the preceding year, while anthracite purchases totaled \$3,715,000, or an increase of \$625,000 compared with 1942. Purchases of fuel oil in 1943 amounted to \$136,905,000, compared with \$99,767,000 in the preceding year. For gasoline, there was an expenditure of \$5,782,000 in the past year, while for all other fuels, including coke, wood, and fuel for illumination, expenditures amounted to \$5,496,000.

Purchases of forest products amounted to \$150,255,000 in 1943 compared with \$115,227,000 in 1942. For cross ties, including switch and bridge ties, the railroads expended \$92,871,000 in 1943, an increase of \$21,683,000 above such expenditures in 1942. Purchases of lumber, including timber as well as other forest products amounted to \$57,384,000, or an increase of \$13,345,000 above the preceding year.

Class I railroads in 1943 purchased iron and steel products amounting to \$410,803,000, compared with \$433,089,000 in 1942, or a decrease of \$22,286,000. For locomotive and car castings, beams, couplers, frames and car roofs, the railroads spent \$49,440,000 in 1943, compared with \$61,359,000 in the preceding year. Purchases of steel rail, including new and second-hand except scrap, amounted to \$60,074,000 in 1943, compared with \$55,647,000 in the preceding year; while for track fastenings, track bolts, spikes, and other such materials used in connection with the laying of rails, the railroads expended \$43,804,000, or a decrease of \$9,545,000 below the preceding year.

## Just a Minute..



You may find just what you need to fill that order by getting in touch with Lyon, Conklin & Co. in Baltimore.

Since way back in 1860, Lyon, Conklin & Co. has been a dependable source of supply for sheet metals and accessories, building materials, composition roofing and construction equipment of all kinds.

This "metal bank" has met many emergencies during World War II, but we still carry a good stock of available supplies. Before you turn any order down, check with us. Every job you can accept today is a definite contribution to industrial stability.

*Tell us your requirements. If we can handle it, we'll ship promptly.*

## Lyon, Conklin & Co. Inc.

Baltimore 30,

Maryland

# What About Our Huge Federal Debt?

(Continued from page 60)

gold and 3 billion dollars of silver and other metallic coin. These 25 billion dollars are what they are merely because the government has prescribed that the dollar shall weigh a certain number of grains of gold or silver. All that the government need do to pay off this 300 billion dollar debt is to reduce the weight of each dollar sufficiently to make 275 billion more dollars, a total of 300 billions. Since each of the 25 billion dollars, in terms of gold, has in it 13.714 fine grains of gold, we could make these 25 billions yield 300 billions simply by stipulating in law that each gold dollar (and silver proportionately) would have in it 1.14 grains of gold.

The Treasury would then be able to pay all its debts in full in gold and silver money or in gold and silver certificates. The taxpayers would be relieved of a tax burden of 300 billion dollars, and the interest accumulation would end. All banks and all other institutions heavily loaded with government securities would receive cash in exchange and become highly liquid. Money would be so plentiful that interest rates would be very low. This would make it easy for people to borrow and for business to expand. We shall need new homes, new businesses, new machinery, new roads, new vehicles, and new goods of a great variety. We shall wish to expand our export trade; devaluation will make it easy for the foreigner to buy our goods. Our dollar would cost him only about one-twelfth as much as our present one. We would be in a better position to collect in dollars the great debts that the people of other countries will owe us.

The flaws and dangers in these contentions are, in essentials, these: Such a radical devaluation of the dollar would flood this country with such a huge volume of money that all the dams against runaway prices would be swept away. No one could predict where prices might go. Cash reserves of 300 billion dollars in our banks could support approximately 8,550 billion dollars of deposits, using a reserve-to-deposits ratio of 35 per cent for the Federal Reserve

banks and a 10 per cent ratio for other banks. If these deposits should turn over 50 times per year—the approximate rate for demand deposits in 1928-1929—the amount of spending for the year would amount to 427,500 billion dollars. This would be 356 times the estimated expenditures for 1929 as revealed by bank debits. Although no one could say how high the price level would be, it doubtless would or could be at a fantastically high level.

All this means that all holders of government securities would be paid off in greatly depreciated dollars. This would be merely one way of repudiating the Federal debt. In addition, all people with relatively fixed incomes would be penalized similarly—and, in general, this would include the great mass of people. Although exporters should experience a great increase in demand for their products, assuming no offsetting factors, importers would suffer a devastating penalty. Devaluation of the dollar by 91.5 per cent—giving ourselves a dollar only 8.5 per cent as heavy as the present one—would mean that importers would have to pay 11.76 times as much for their imports as would otherwise have been the case. This would be raising a tariff wall with a vengeance.

No nation prospers by selling its goods for 8.5 per cent on the dollar or by making its importers pay fabulous prices in dollars for their imports.

In short, if the devaluationist says he could, by devaluation of the dollar, pay off the Federal debt and relieve the taxpayers, the answer is that he would at the same time practically ruin them and all other citizens by subjecting them to the devastating evils which result from a great depreciation and expansion of a currency.

The arguments which the advocate of fiat money could advance in behalf of his program "as a way out" are much the same as those at the disposal of the devaluationist. The fiat money advocate would simply issue 300 billion dollars of paper money against our 25 billion dollars of gold and silver. One might

assume that, as a consequence, the price of the present gold dollar would tend to cost approximately \$12 in terms of the new paper dollar. Actually, no one could predict with accuracy what such a great volume of paper money would be worth in terms of gold and silver. Psychological factors might easily drive it far below any calculated level. Foreign exchange rates would fluctuate accordingly. The great mass of people would be impoverished. The real wealth of the nation would be exported rapidly and imports of real wealth would dwindle sharply after the initial periods of quick reaction of the opposite type had passed.

The end of such an attempt to escape the burdens of the national debt would be national disaster.

Any other plan for partial or full repudiation of the national debt would bring misfortune. Repudiation is repudiation, and no species of argument can alter this fact.

There is no sleight-of-hand method by which the American people can escape the burden of the great national debt which they will face, and they would do well to understand this. Only work, production, and saving will ever pay it off. Any attempt to escape this burden will lead to something worse.

The question to which serious consideration should be given is whether an attempt should be made to retire this debt as rapidly as possible or whether it should be carried as a permanent or indeterminate one, using only accidental surpluses for purposes of retirement. These are the debt disposal issues with which the American people should concern themselves; these alone.

If the debt, at its peak, should fall considerably short of the predicted 300 billion dollar load, and if the people are not unduly pessimistic and appear willing to face a heavy tax load, then a program involving provision for relatively rapid retirement might well be adopted. Otherwise, particularly if it appears that heavy taxation would discourage or impede an expansion of

(Continued on page 66)

# DAVIS CYPRESS TANKS

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We can produce plenty of testimony from paper, pulp, dye and knitting mills, etc. Our cypress tanks have to be installed but once. Cypress is the reason. Let us hear from you. Wood pipe also.



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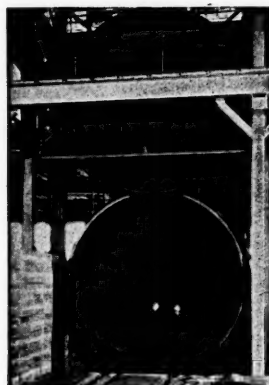
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**FOR Road Building, Concrete  
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Four Plants Located on N. & W. and A. C. L. Railways  
10,000 tons daily capacity

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**ELEVATED TANKS — PRESSURE TANKS — STEEL  
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*General Steel Plate Construction  
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Starch kettles, digestors, vats, and other vessels of this durable metal. Your designs or ours—"custom made" to order.

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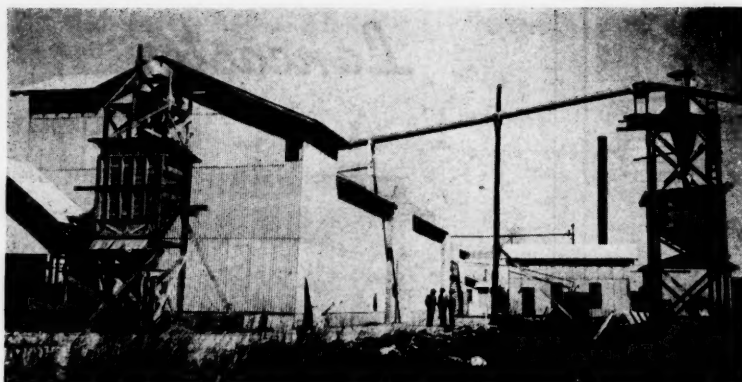
**R. D. COLE MANUFACTURING CO.**

ESTABLISHED 1854

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## Mississippi Tung Oil Plant Completed

A modern Tung Oil plant has just been completed and put into operation at Picayune, Mississippi by L. O. Crosby & Sons. The plant, except the office, is of concrete and steel construction. The main building is 40 feet by 200 feet. Three brick fire walls divide it into four fireproof compartments.

The nuts are dumped from trucks at one end of the building by electric hoist raising the front end of the truck and dumping the nuts into a pit from which they are carried by conveyor into storage bins and from storage bins into the huller. From huller the nut meats are carried into the next compartment where they are properly dried by fans and regulated heat.

The dried meats are then ground up and carried to the expellers, and the oil is then put through filter press and into storage tanks on outside, while the meal cake is carried into another building, which is also of fireproof construction, where it is ground up, put into even weight bags by automatic scales and sold for fertilizer. Natural gas is used for fuel.

From the time the nuts are dropped off the truck until the oil is run into the tanks, the whole process is practically automatic, being handled all the way by conveyor system, automatic feeders, pumps, etc.

The factory building is equipped with fan and dust collector throughout the building. Dust being collected and deposited outside. The entire building is piped with air for cleaning walls, motors, etc. There is a mile of 18-foot concrete drive-ways in and around the plant.

A solvent process has been perfected that will recover from the meal and roots much tung oil that has heretofore been lost.

The plant was built for a capacity of 100 tons of nuts a day, but inability to get needed materials limits its present capacity to 60 tons daily.

A modern laboratory in the plant facilitates handling nut samples. Roy L. Williams designed and constructed the mill and is now operating it for L. O. Crosby and Sons of Picayune, owners.

### Industrial Stores

(Continued from page 46)

locality. In many cases its sales have doubled over the past few years. This fact indicates that new customers are being added to the rolls of company stores who have nothing whatever to do with the coal mining business, but who buy because they like the price, and because they like the merchandise. Too, the coal company store has competition. It has been estimated by observers in the field, that there are on an average two independent stores in coal mining regions to every company store.

Off duty, the coal miner is a well-

dressed individual. So are his wife and daughter. They like to dress up, and they do dress up, old and young, just as do the women in the cities and other larger communities. They eat and live well too. It is a very exhilarating experience to see the cheery, orderly, nice interiors of their homes and the good taste that most of these homemakers display in the arrangement of their homes. They are a very friendly people and the managements of coal company stores believe that they are closer to their customers, that they provide them with a great many extraordinary services, and that the coal miner and the stores' personnel are more friendly to each other than the usual customers which make up a city retail store business.

### Lumber Use Over Output

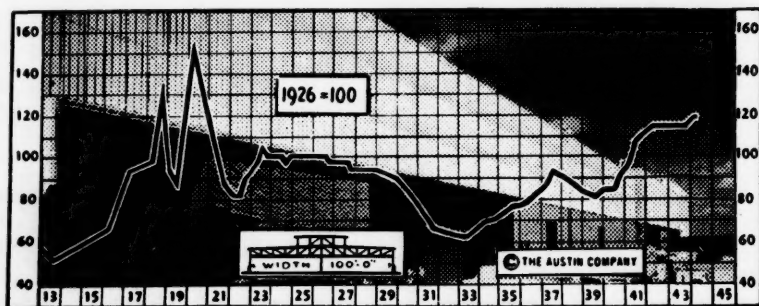
Lumber consumption exceeded production by 4,200,000,000 board feet in 1943, War Production Board reports. Total 1943 production is estimated at 34,630,000,000 board feet, a 5 per cent decline from 1942 production. Consumption in 1942 exceeded production by 6,900,000,000 board feet.

The gap between consumption and production during the past two years has necessitated heavy withdrawals from mill, wholesale and retail stocks. Estimated lumber stocks for the first quarter of 1944 stood at 7,284,000,000 board feet, a drop of nearly 10,000,000,000 from the first quarter of 1942.

Production is limited by manpower shortages and logging equipment shortages, chiefly tractors, trucks, heavy tires and repair parts. The production goal for 1943, set at 32,000,000,000 board feet, has been exceeded, and the decline of 5 per cent from 1942 production is far less than was expected.

In 1943, direct and indirect military use accounted for 77 per cent of all consumption. Chief rise in consumption is for boxing, crating and dunnage and still greater use for these purposes is expected in 1944.

*Below—Industrial building costs have remained stable during the first quarter of 1944, according to the Austin Company which reports its quarterly index figure on factory building costs is unchanged.*




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Now you can fasten V-belts  
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# ALLIGATOR

## V-BELT FASTENERS



● Alligator V-belt Fasteners and the open-end V-belt now being made by belting manufacturers, will enable you to make up multiple V-belt drives from roll belting. These fasteners have been on the market 9 years and are now being used on a wide variety of drives.

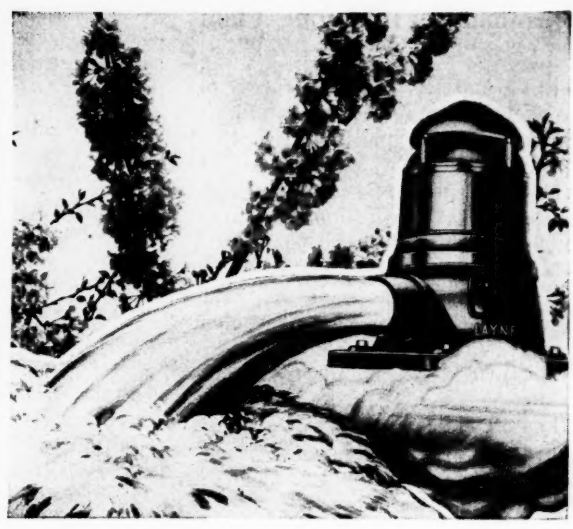
Available for B, C, D sizes of belt for industrial use and 1-in. and 2-in. sizes for railroad use. These fasteners, however, should not be used for repairing endless cord V-belts.

Bulletin V-205 will give you complete details as to where and how these fasteners are used, sizes, list prices, tools and application instructions. A copy will be mailed at your request.

Order from your supply house

**FLEXIBLE STEEL LACING COMPANY**  
4690 Lexington Street, Chicago 44, Illinois

Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.



## IT'S ALWAYS FAIR WEATHER

### For a Layne Water System

It's always Fair Weather for America's most skilfully designed, sturdily built and thoroughly proven Water Supply System. Sixty-two years of world-wide leadership in well and pump construction are today paying extra dividends in outstanding performance.

Layne, as a pioneer in water development service has encountered—and solved, perhaps a hundred times more problems than was ever faced by their nearest competitor.

For postwar days, many new well water systems will be needed. They must possess three important features: long life construction, high volume production, and economical operation. Layne Water Systems have always been outstanding in those very attributes.

Layne is now offering engineering guidance on postwar Water System construction plans. This service is obtainable without obligation. Now is the time to present your water supply problem. Literature on Layne Wells and Pumps may be obtained by addressing LAYNE & BOWLER, INC., General Office, Memphis 8, Tennessee.



## MOVE MATERIALS FOR WAR AND PEACE

### IN *Fulton* WATERPROOF COTTON AND BURLAP PAPER LINED BAGS

In these times bag production is war production. Our plants have supplied millions of sand bags as well as various other items for use in combat areas. Behind the lines, supplies of food and other material are transported thousands of miles in bags specially designed to protect contents against hazards of rough handling, moisture and insects. Back here at home bags must move a long list of essential commodities ranging from small machine parts, through dozens of items of food, feed and produce to the hygroscopic chemicals requiring special waterproof packages. Many Fulton Waterproof Paper Lined Bags are replacing containers made of critical materials—metal drums, wooden boxes and barrels.

The output of our plants will continue to be devoted to these essential requirements until Victory itself is "in the bag."

**FULTON BAG & COTTON MILLS**  
Manufacturers since 1870

Atlanta      St. Louis      Dallas  
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AFFILIATED COMPANIES: Layne-Arkansas Co., Stuttgart, Ark. \* Layne-Atlantic Co., Norfolk, Va. \* Layne-Central Co., Memphis, Tenn. \* Layne-Northern Co., Mishawaka, Ind. \* Layne-Louisiana Co., Lake Charles, La. \* Louisiana Well Co., Monroe, La. \* Layne-New York Co., New York City \* Layne-Northwest Co., Milwaukee, Wis. \* Layne-Ohio Co., Columbus, Ohio \* Layne-Texas Co., Houston, Texas \* Layne-Western Co., Kansas City, Mo. \* Layne-Western Co. of Minnesota, Minneapolis, Minn. \* International Water Supply, Ltd., London, Ontario, Canada.



## WELL WATER SYSTEMS

### DEEP WELL PUMPS

**BUILDERS OF WELL WATER SYSTEMS FOR EVERY INDUSTRIAL AND MUNICIPAL NEED**

## Birmingham Detinning Plant

(Continued from page 45)

most wholly a chemical process to convert the tin in solution, obtained in the detinning phase, to tin oxide for shipment. The solution is passed through a number of tanks and processes and the tin oxide as a slurry is filtered out, dried and packed for shipment.

In designing and building the plant, the Ferguson Company acted as agents for Defense Plant Corporation, owners. A management contract has been signed by DPC with the Johnston & Jennings Company of Cleveland—who have been engaged in the detinning business since 1892—for the overall supervision of the operation. The plant was designed and built around a process developed by the Metal and Thermit Corporation, of New York, and offered to the Defense Plant Corporation.

## Golf Can Be a Business

(Continued from page 44)

Club, and the same directors that were originally elected along with him in 1937, save one, are still the governing board.

Applying the same fundamental principles in the operation and development of Tam O'Shanter that have made his company successful as business engineers, the club has a plant of over \$1,000,000 with every comfort and convenience for its members. What is more, the club no longer needs red ink in preparing its annual financial statements.

Not only does Mr. May have a unique background in business engineering and golf club management, but his experience in the development of golf has been augmented by a number of successful golf tournaments held at Tam O'Shanter which have caused him to be recognized as one of the leading promoters of golf in America. His first experience with golf tournaments was in July, 1940, when he organized and conducted a tournament at Tam O'Shanter Country Club, known as the Third Chicago Open Golf Tournament. It was amazingly successful with 18,000 people in attendance and showed a profit for the first time in its history. Since that time he has sponsored a

## Huge Federal Debt

(Continued from page 62)

productive activity, it would appear wiser and safer to embark upon a program involving a permanent or indeterminate debt. It seems reasonable to assume that we have a sufficient number of institutions and individuals seeking safety in investment to absorb this debt should a policy of an indeterminate debt be deemed the best to pursue.

In the meantime, every effort should be made by Congress to curb and eliminate all unnecessary Federal expenditures. The national patrimony has been, and is still being, dissipated in appalling and frightful ways. The cynical wastefulness of the people's money by the spenders provides one of the sorriest manifestations of the defeatism and pessimism which have engulfed this nation since the early 1930's.

If this inexcusable wastefulness can be halted, and if the defeatist and pessimistic philosophy, encouraged by the business depression of the last decade, can be replaced by a better understanding of economics, by a better perspective, and by an healthy optimism, some of the most serious obstacles in the way of the adoption of a wise debt policy will be removed.

number of tournaments, among them the National Amateur, Tam O'Shanter All-American Amateur, Tam O'Shanter All-American Open and the All-American Amateur.

With his background of business and golf experience, George S. May, on August 28, 1943, founded another organization — The American Golf Foundation. This was conceived as a "non-profit organization devoted to the interests of golf." Its primary objective is direct service to Golf Clubs, since only through the widespread existence of Golf Clubs, all on a prosperous going basis, can the sport find fullest expression and expansion.

Officers of the foundation meet and decide the subjects of greatest and most timely interest to golf club officers and directors. Subjects selected for study get thorough analy-

sis by competent research engineers, many of them from the George S. May Company. Every factor involved is then investigated exhaustively. The data so assembled is then placed in the hands of expert writers to be polished into straightforward, simple understandable reports. The reports after top flight artists, engravers and typesetters put them in attractive form will be mailed to every Golf Club in America, free of charge.

This is something new in the way of service—a service to which golf clubs can go for competent advice on all phases of management, finance, grounds detail and promotion. Mr. May realized that a golf club to function successfully as a social organization should be first established on the identical basis of a successful business enterprise.

## Petroleum and Pipelines

(Continued from page 50)

for manufactured gas is also seen as affecting the petroleum industry by reducing the requirements for oil products in two respects. Substantial quantities of oil are used to enrich the gas manufactured principally from coal. Estimates place this total at 15,000,000 barrels of gas oil or other petroleum products utilized for this purpose in manufacture of gas in the area. (S. A. L.)

## Nylon—In War and Peace

(Continued from page 43)

hardens it for rotary cutter which chips it into flakes.

DuPont policies during the post-war years will be to continue to improve the quality of existing products; to find new and broader public use of such products and to develop new products in line with the general theme to produce "better things for better living—through chemistry." (S. A. L.)

## Double Award for Jenkins

Jenkins Bros., Bridgeport, Conn., manufacturers of valves and fittings, have a third award from the Maritime Commission and a fourth from the Army and Navy for excellence for producing valves for cargo and fighting ships.

The flags, each bearing an additional star, were hoisted in a ceremony on the lawn of the plant. They were raised by six returned Army men back at their old jobs at Jenkins Bros. These flags represent seven merit awards to Jenkins.

"The White exceeding charging compared to the locomotive has been im

THE B G

Se





**One of our customers writes:**

"The Whitcomb Diesel has proven to be eminently satisfactory, exceeding our highest expectations. This equipment hauls six charging cars up the steep grade from the charging pit, as compared to the maximum of three cars formerly handled by a steam locomotive at its prime. The Whitcomb low fuel consumption has been impressive."

# POWER TO SPARE

## One of the Fundamentals

The others are sturdy construction, low-cost maintenance, and efficient and dependable operation. All unnecessary parts are eliminated and in the Whitcomb you have a simple, powerful unit that stands out as the most practical industrial locomotive found anywhere in the world.



**DIESEL, GASOLINE, MECHANICAL, OR ELECTRIC DRIVE — The Products of a Pioneer.**

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*Subsidiary of* ROCHELLE, ILL.  
THE BALDWIN LOCOMOTIVE WORKS



**Self-loading,  
Self-unloading**

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**STRADDLE  
TRUCKS**

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APRIL NINETEEN FORTY-FOUR

## Cork Oaks Planted in Three States

(Continued from page 44)

ernor Bailey made special note of the many organizations that cooperated in sponsoring the program. He referred to the importance of conservation and value of Mississippi's forests. In dedicating the cork tree Governor Bailey expressed hope and belief that the cork oak would successfully grow in Mississippi and praised the work of the forestry men responsible for the splendid progress made in planting cork trees throughout the State. The Governor further stated: "This occasion is typical of Mississippi. We want to avail ourselves of the opportunity to produce the products of nature. To this end we have placed this cork oak on a favored spot on the Capitol Grounds."

Also participating in these important and interesting programs were other prominent public officials and civic leaders. These public spirited men and women presented helpful, stimulating addresses on conservation and the cork oak. The cork tree plantings were sponsored, in each state, by a large number of organizations, which included the Garden Clubs, Federation of Women's Clubs, Educational Leaders and Associations and various Forestry Groups. Speakers from these organizations told their listeners of the value of conservation and importance of planting trees.

The part taken by the schools in these ceremonies was very outstanding. At each of the three celebrations music was supplied by the local high school band. In Columbia cork acorns were distributed to boys and girls in every one of the city schools. In Montgomery cork trees were planted on the grounds of many schools and a special project covering the value and culture of the cork oak is being conducted. At Jackson legislation has been passed recently to provide for the teaching of forestry in the public schools of the state.

The cork trees planted at the celebrations were given by Charles E. McManus, President, Crown Cork & Seal Company, to encourage and promote the growing of cork oaks in these states. Through the nation-

wide cork growing project, initiated and sponsored by Mr. McManus, cork seedlings are made available, free of charge, to persons interested in growing cork trees. Extensive plantings were made in these three states during the past year through the cooperation of the local foresters.

In South Carolina, State Forester, W. C. Hammerle, grew over 10,000 cork seedlings in the state forest nursery. Through Extension Forester W. J. Barker and Mr. Hammerle these seedlings were distributed throughout the state and cork plantings were made in all of South Carolina's forty-six counties.

More than 10,000 cork seedlings were grown by J. M. Stauffer, State Forester of Alabama and distributed to various parts of this state. During 1943 Mr. Stauffer also distributed many cork acorns to interested planters.

In Mississippi the number of

cork seedlings produced in the Mt. Olive Nursery by State Forester Albert A. Legett exceeded 10,000. Through the cooperation of Extension forester Monty Payne these seedlings were planted in forty-seven Mississippi counties.

These special celebrations were made possible through the efforts of the local foresters. The programs gave recognition to the splendid progress made already in planting cork trees and urged the continuance of this valuable work. Anyone visiting Columbia, Montgomery, or Jackson will have an opportunity to see a cork oak. This tree is an evergreen and makes an attractive ornamental. In the cork tree nature has combined beauty with utility. The cork oak is recommended to all who can make plantings of this essential tree.

Cork growing in the South has surged forward within the past year. And during the next twelve months, cork oaks will be planted by the Governors of other southern states.

## TRADE LITERATURE

### And Related Publications

#### INFRA RED EQUIPMENT—

Fostoria Pressed Steel Corp., Fostoria, Ohio, manufacturers of pressed steel and infrared electrical equipment for baking, drying, preheating and dehydrating, have published a brochure illustrating the uses of infrared in a number of industries. Ask for brochure, "Good Things Often Come in Small Packages."

#### MACHINE TOOL ACCESSORIES—

A new catalog of machine tool accessories has been issued by Machinery Products Division, Ideal Commutator Dresser Co., 1290 Park Ave., Sycamore, Ill. Profusely illustrated with diagrams and photographs, practical applications are shown.

#### NEW ELECTRIC TRUCK CATALOG—

Catalog, No. 52, has been issued by Baker Industrial Truck Division of Baker Rauland Co., 2168 W. 25 St., Cleveland, Ohio. In three colors, contains help for any plant or warehouse faced with transportation problems.

#### FASTENER HANDBOOK—

"Fasteners" is the title of a new publication to be issued periodically by the American Institute of Bolt, Nut and Rivet Manufacturers, 1550 Hanna Bldg., Cleveland 15, Ohio. Primary objective will be to provide factual engineering data pertinent to important developments in the industry.

#### CONVEYOR-ELEVATOR BULLETIN—

Chain Belt Co., Milwaukee, Wis., has prepared a special bulletin, No. 442 giving capacity tables, horsepower formulas, general arrangements and dimensions of their new Rex Uni-Flo conveyor-elevator system

#### GEON RESINS BY GOODRICH—

Description of the unique group of polyvinyl resins and plastics which it has recently developed and offered for distribution to industrial users under the trade name GEON is contained in an attractive four-

page folder just issued by the Chemical Division of The B. F. Goodrich Company, Akron, Ohio, and available upon request.

#### VEST POCKET CATALOG—

A new vest pocket catalog presents the full line of Clark Tractoractors, manufactured by Clark Equipment Co., Battle Creek, Mich. Profusely illustrated, this 72-page booklet fits comfortably into a vest pocket and may be secured by writing the company direct.

#### NEW THERMOCOUPLE BOOK—

Wheeco Instruments Company, Harrison & Peoria Sts., Chicago 7, Illinois, announce a new edition of its Wheeco Thermocouple data book and catalog, Bulletin S2-4. It gives a description of products, prices and recommendations for thermocouple users, and suggests substitutes for restricted materials.

#### SANTE FE PRESENTS CONQUEST—

The Santa Fe Railway has prepared an attractive pictorial booklet, Conquest, which will be of interest to those seeking historical data on railroad pioneering in the West. Address M. L. Lyles, Asst. to the President, Santa Fe Railway, Chicago.

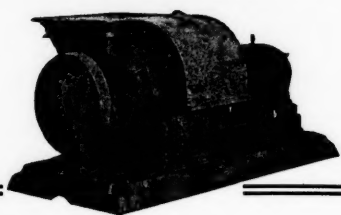
#### NEW BUDA LITERATURE—

The Buda Co., Harvey, Ill., manufacturers of Diesel engines and special railroad equipment have issued a large number of new and colorful Buda bulletins, showing improvements in their standard motor cars, repair parts and cataloging other Buda special equipment.

#### RADIO TESTING INSTRUMENTS—

Radio City Products Co., Inc., 127 W. 26th St., New York 1, N. Y., have issued a new catalog, No. 128, describing their wide range of standard commercial testing instruments. Profusely illustrated, the catalog lists instruments to meet the requirements of all kinds of production testing, laboratory and shop purposes.

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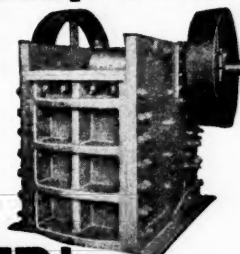
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## Good Packing for Victory

With the invasion of Europe imminent and American operations in the Pacific seriously menacing Japan, good packing, secure loading and careful handling of freight shipments are more important than ever before, according to E. A. Jack, of Pittsburgh, general chairman of a committee which will direct a nationwide perfect shipping campaign during April.

Mr. Jack, who is general traffic manager of the Aluminum Company of America, announced that 13 regional Shippers Advisory Boards, with a membership of more than 25,000 shippers and receivers of freight and express, will take an active part in the drive. Others who will participate include the Association of American Railroads, the Railway Express Agency and other transportation interests.

## Bureau of Mines to Drill Coal

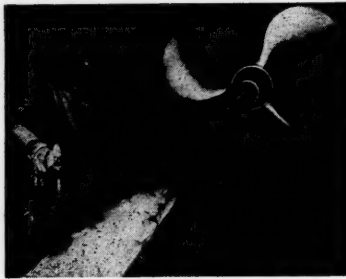
Drilling to determine the feasibility of reopening large scale operations in the Deep River coal belt of North Carolina will be started soon by the U. S. Bureau of Mines. Gov. J. Melville Broughton of North Carolina announced recently that the work will be done under the \$2,000,000 appropriation made by Congress to explore new sources of certain minerals.

The extensive Deep River coal fields have been worked intermittently and unsuccessfully since the Revolution, and closed finally in 1930 after an explosion

(one of a long series) discouraged operators. However H. A. Brassert & Co., after a state-sponsored survey, reported that no unusual difficulties to recovering the coal existed and that modern mining precautions would remove the danger of explosions which have plagued the operation for so many years.

Previous drillings have proven the presence of 8,500,000 tons of coal in the Deep River fields, and the probable reserve is estimated at 46,000,000 tons.

## Molten Synthetic Rubber Solves Sub-chaser Problem



The first successful solution to the menace of destructive electrolytic action, which eats away the propeller shafts of Navy subchasers, minesweepers and other wooden vessels, has been found to be Thiokol synthetic rubber flame-sprayed onto steel propeller shafts by a new process, according to the Schori Process Corp. of Long Island City, N. Y. Heretofore, bronze propellers fitted to steel shafts on wooden vessels, produced an electrolytic ac-

tion through the union of two dissimilar metals in salt water, with the result that the shaft is so eaten away within a few months that it cannot stand up under high-speed operation. After nearly a year of experimenting with flame-sprayed plastics, which all proved too brittle and could not be easily ground for spray gun operation, Schori engineers found that Thiokol synthetic rubber could be sprayed on the shaft while in position on the ship. The molten rubber hardens rapidly to form a firmly-bonded coating with an extremely high abrasion resistance.

## Post-War Aviation Gas

Post-war airplanes may be designed to use the same gasoline as post-war automobiles, Thomas H. Risk, refinery technologist of Ethyl Corp., predicts in a survey of factors affecting the antiknock performance of peacetime gasolines. Ethyl gasoline with an octane number of 85 to 88 will make this dual function possible, Mr. Risk says.

Such gasoline will be comparable in antiknock quality to the 87 octane aviation gasoline sold prior to the war. Hence it is conceivable that many of the post-war planes, estimated at 500,000 by 1950, will be designed to use premium grade motor fuel rather than a special aviation gasoline, the survey points out.

Values of 85 octane number for premium fuel and 79 octane number for regular fuel are indicated for as early as next year, should the war end that soon. Refinery equipment now under construction will have been completed by 1945 and therefore available for peacetime production of gasoline.

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A Bowser Still, basically similar to those which Bowser makes for the dry-cleaning industry, was recommended... and installed. With it, thousands of gallons of solvents were reclaimed at a cost of only a few cents per gallon, about one-tenth of the old cost. At that rate of saving, the Still paid for itself in its first 150 hours of operation.

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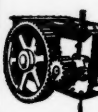
And here's an important point to remember—wherever your plant is located, you're close to a complete Bowser service organization. BOWSER, INC., Fort Wayne 5, Indiana.



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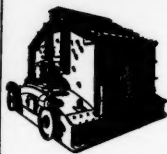


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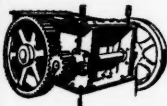
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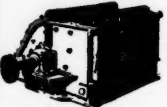
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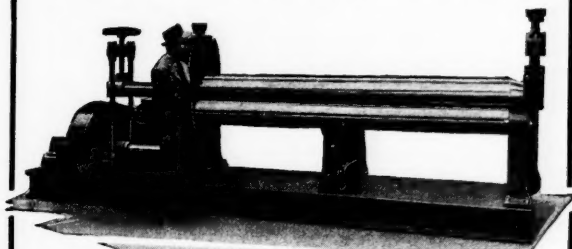
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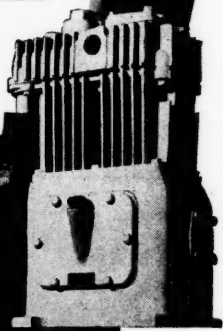
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**TVA—Democracy on the March**—Ten years of experience bought at a cost of hundreds of millions of dollars is what David E. Lillenthal, chairman of the Tennessee Valley Authority, has funneled into two hundred and twenty-five pages of what he describes as a book about tomorrow written today under the title of "TVA—Democracy on the March" in an attempt to penetrate the fog of uncertainty and confusion concealing the future.

Great and expensive dams, the symbols of the Tennessee Valley experiment in the eyes of most people are practically forgotten as the narrative which evolved from the Muscle Shoals controversy of a past war is unfolded for the benefit of a world badly in need of conviction by the writer.

The heavy pedal of emphasis is placed on a river harnessed to become the second largest producer of power in the country, according to the writer; to make 12 billion kilowatt hours of electricity the goal by which human energies are multiplied into 120 billion man hours of effort applied to the resources of a single region.

To the question of where TVA power is

used, Mr. Lillenthal answers that in the last few years most of it has gone directly into war production, advancing the statement that it "has produced a major part of the aluminum for American aircraft—at one critical phase of the war more than half—and aluminum is mostly the product of electric power; as much electricity goes into one big bomber as the average household would consume in four hundred years."

Delving into what he calls "democracy at the grass roots," Mr. Lillenthal says the hankering to be an individual is probably greater today than ever before, and yet "huge factories, assembly lines, mysterious mechanisms, standardization — these underline the smallness of the individual, because they are so fatally impersonal."

Warning that the fate of private industry as we have known it may be at stake, the TVA chairman predicts that eloquent orators and full-page advertisements extolling the advantages of private industry are to no avail if industry loses the confidence of the people "and that confidence will almost surely be forfeit if in the coming decade the people

believe the results of industrialization are bad."

In his opening paragraphs, the author admits he is not a professional writer and that the book bears the literary marks of that deficiency. He recognizes that he cannot be wholly objective in his appraisal of the TVA and cautions that the reader will find "No tone of Olympian neutrality." For this there is no apology, he says, as the book expresses convictions and conclusions. These have been publicly spoken during the last several years and this condensation in book form bears a striking resemblance in instances to those speeches.

Price of **TVA—Democracy on the March** is \$2.50. Harper & Brothers, 49 East 33rd Street, New York, are the publishers.

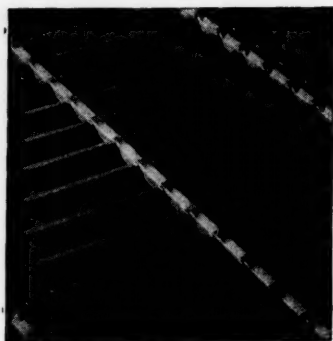
**Bureaucracy Runs Amuck**, latest book from the pen of Lawrence Sullivan, former Associated Press writer who has specialized in government-business relations, is 287 pages of crystal clear revelation of the fumbling, experimental bureaucracy that is the present Administration. Written in the concise style of an experienced newsmen, with the sure knowledge of one who really understands both economics and history, the myriad of bureaus, agencies and executive directives are dissected in such fashion as to clearly delineate the dangers of further entrusting administrative responsibilities to a group that has bungled domestic recovery for seven years and now faces the gigantic task of rehabilitating a world all but destroyed by war. Mr. Lawrence calls on us, "not to make a new start along untrod paths, but to set our course resolute by the fixed stars of our bright heritage — human liberty, individual security against aggressions by government, free enterprise, freedom of speech and communication, and unyielding defense of absolute and complete national sovereignty in our relations abroad." Such a course, says Mr. Lawrence, would see our people redeemed and free once more to work, build, save and light again the torches of 135 million personal ambitions for a life of peace, dignity, security and constructive social progress. Bobbs-Merrill, \$2.00.

#### RADIO & ELECTRONIC NEWS—

A monthly bulletin of developments in the electronic field is now published by Allied Radio Corp., 833 W Jackson Blvd., Chicago 7, Ill.

#### Charleston, S. C., Year Book

The Year Book of the City of Charleston, S. C., issued by the municipal government, contains informative and complete data of city finances, departments, tax rates and material bearing upon the growth of the city. The appendix, with noteworthy illustrations, will be of value to those interested in the history that has given Charleston and South Carolina a vital place in America's development.



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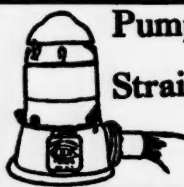
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